EXHIBIT B

UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF PENNSYLVANIA

SAVVY DOG SYSTEMS, LLC, a Wyoming limited liability company, and POM OF PENNSYLVANIA, LLC a Wyoming limited liability company, Plaintiff, v. PENNSYLVANIA COIN, LLC, a Pennsylvania limited liability company, and PA COIN HOLDINGS, LLC, a Pennsylvania limited liability company, Defendants.	Civil Action No. 3:19-cv-01470-JPW Honorable Jennifer P. Wilson

AMENDED RESPONSIVE EXPERT REPORT OF KEVIN HARRIGAN, Ph.D.

CONTAINS INFORMATION DESIGNATED AS "HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY" AND "PACE-O-MATIC – OUTSIDE ATTORNEYS' EYES ONLY" PURSUANT TO THE STIPULATED PROTECTIVE ORDER [DKT. 53] AND STIPULATED PROTECTIVE ORDER GOVERNING DISCOVERY OF NON-PARTIES BANILLA GAMES, INC., GROVER GAMING, INC., AND PACE-O-MATIC, INC. [DKT. 104-1]

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TABLE OF ABBREVIATIONS

- "223 Patent" – U.S. Patent No. 7,736,223
- "2011 Video" – an online video that was apparently uploaded to YouTube in September 2011, at https://www.youtube.com/watch?v=XCCfMtFafgw&feature=youtu.be purportedly by "Universal Amusement"
- "AIA" – the Leahy–Smith America Invents Act
- "AGT" – Apex Gaming Terminal
- *"Alice" – Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 218 (2014).
- "Automatic Display Element – claim elements in the 223 Patent describing the automatic display of an actual game to be played to the player on a touch screen prior to initiating the activation of game play
- "Bar Date" – a date that is on or before June 30, 2005 (more than one year prior to the application for patent)
- "Challenged Claims" – Claims 1, 3, 5-7, 11, 13, 15, 18-20, 22, 25, 27, 29-31, 33, 37-42, 44-49, and 51-56 of the 223 Patent
- "Friedman Report" – the Expert Report of Stacy Friedman, October 19, 2021
- "NFA" – Nick Farley & Associates

- "NudgeMaster" – a variety of themed skill games under development at World Touch Gaming ("WTG")
- "October 2005 Hearing"– hearing before the Ohio Liquor Control Commission, in Case No. 1342-05, *In re: FOE Aerie 2171*.
- "OSG" – Ohio Skill Games
- "POM" – Pace-O-Matic, Inc.
- "POSITA" – person of ordinary skill in the art
- "Riedthaler Report" – report prepared in July 2005 by William Riedthaler for the State of Ohio in connection with his inspection of certain Tic-Tac-Fruit machines
- "Savvy Dog" – Plaintiffs
- "Section 101" – 35 U.S.C. Section 101
- "Section 112" – 35 U.S.C. Section 112
- "Testing Element" – claim elements in the 223 Patent describing the testing of a constructed game field before it is displayed to make sure that the completion of the game field does not yield a winning combination that is more valuable than the determined winning combination
- "TTF" – Tic-Tac-Fruit
- "WTG" – World Touch Gaming

TABLE OF CLAIM CONSTRUCTIONS

Terms (and Claims)	Construction of the Court
prior to displaying	before making visible on the touch screen display
computer readable code	code in a form that can be executed by the computer
winning combination	array of game symbols in the game field yielding a successful outcome
[determining/determine/determined] at least one winning combination for each play of the game	establish or ascertain at least one winning combination, properly construed, for each game to be played
test[ing] the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field	test[ing] the game field prior to displaying the actual game to be played to the player to ensure that a winning combination more valuable than the previously determined winning combination, properly construed, is not generated inadvertently when the player completes a winning combination during play of the game.
automatically display[ing] an actual game to be played on the touch screen game display to a player prior to initiating activation of game play	automatically display[ing] an actual game to be played, properly construed, on the touch screen game display to a player prior to initiating activation of game play
an actual game to be played	the constructed game field of the game to be played
game processor	a CPU or microprocessor that executes program instructions to generate a game
program instructions	conventional commands that can be executed by a computer
Terms (and Claims)	**Parties' Agreed Construction**
prior to displaying	before making visible on the touch screen display
computer readable code	code in a form that can be executed by the computer

I. INTRODUCTION

1. My name is Kevin Harrigan, Ph.D. Plaintiffs in this case (sometimes collectively referred to as "Savvy Dog") have asked me to respond to the report issued by Defendants' expert Stacy Friedman (sometimes referred to as the "Friedman Report"). The Friedman Report makes various arguments that U.S. Patent No. 7,736,223 (sometimes the "223 Patent") is invalid, including because the claims of the 223 Patent lack patentable subject matter, fail to meet the requirements of Section 112 of the Patent Code including the written description requirement, are anticipated and rendered obvious by the prior art, and were invented by persons other than the sole, named inventor (Michael Pace).

2. I understand from Plaintiffs' counsel and assume that the claims of the 223 Patent are presumed to be valid. Defendants must prove invalidity by clear and convincing evidence. I further understand and assume that clear and convincing evidence means that the evidence is highly probable and substantially more likely to be true than untrue.

3. After reviewing the Friedman Report, reviewing the materials set forth as described herein and in Exhibit A hereto and visiting Pace-O-Matic, Inc. ("POM"), a company affiliated with Savvy Dog, to inspect various electronic game devices identified in the Friedman Report, and assuming certain statements of law provided by counsel for Savvy Dog, I conclude that the Friedman Report fails to

provide sufficient evidence to establish any of its invalidity arguments by clear and convincing evidence. Indeed, my opinion is that the Challenged Claims, and in particular Claim 44 of the 223 Patent, describe a novel, specially configured electronic game processor that was not known, much less well-known, routine or conventional at the time of the invention, and that none of the claims of the 223 Patent are anticipated or rendered obvious by the prior art recited in the Friedman Report. Furthermore, I am of the opinion that the claims of the 223 Patent meet the requirements of Section 112 raised in the Friedman Report, including the written description requirement. Finally, based on the evidence I have reviewed and the law on inventorship that I have been provided, I am of the opinion that Mr. Pace is the inventor of the 223 Patent, as opposed to Kurt Gearhiser or William Riedthaler. My analysis and conclusions are set forth below.

4. Savvy Dog is compensating me at the rate of $400 per hour for my work (with $200 per hour for travel) on this matter. Payment is in no way contingent upon any results in this case, or on the substance of the opinions I arrive at, or my testimony in this case. Before proceeding with my discussion and analysis in Sections III-X below, I first set forth my expert qualifications.

II. QUALIFICATIONS

5. My experience and qualifications are further provided in my curriculum vitae, which is submitted with this Expert Report as Exhibit B. My

curriculum vitae also provides a list of my academic journal article publications and the legal cases in which I have testified as an expert at trial or by deposition during the last four years.

6. I graduated with a Bachelor of Science degree in Computer Science from the University of New Brunswick in 1982. I received a Master of Science degree in Computer Science from the University of New Brunswick in 1984. I completed a Ph.D. in Computer Applications in Education from the University of Toronto in 1996.

7. I taught various Computer Science courses, mostly in computer programming and computer algorithms, at universities between 1984 and 1991. During that time, I also worked as a manager in several computer departments.

8. In 1991, I became interested in the design and programming of computer games and have been teaching various courses in game design and game programming at universities since then, leading student teams designing and implementing several hundred working game prototypes over the years. I have taught approximately 30 post-secondary courses in multimedia and game design since 1991. In my courses I have taught the computer programming skills needed to program games, as well as game design fundamentals that should be considered when designing a game. These considerations include player demographics, game

story, game aesthetics, competition, and what type of games is desired (*e.g.*, strategy, action, adventure, and role-playing).

9. In 1997 I began researching and teaching about computer algorithms that are used in electronic games, especially slot machine games, following the introduction of approximately 25,000 slot machines in my home province of Ontario, Canada in 1994.

10. At that time, I read U.S. Patent No. 4448419A (Telnaes, inventor) which described how to create near misses on slot machine games. Near misses are outcomes that appear close to a big win, but are losses. As one gambler said, "Oh Shucks, just missed it!" I studied the Telnaes patent for over three months full-time in 1999 or 2000. It was at this time that I decided to specialize in electronic games research, as I was fascinated by the algorithms used in electronic games and how regulators make decisions about the legality of electronic games.

11. In 2000, two business partners and I started a company called Game Planit Interactive Corp to build educational multimedia software related to problems with electronic games, especially for slot machine players.

12. In 2000, I designed and produced a CD called "Safe@Play Slot Machine Tutorial" with a colleague that teaches users about the design of slot machine games. The tutorial consists of approximately 42 screens. I designed 40 of the screens while my colleague Roger Horbay designed 2 of the screens. Since

that time, I have designed several slot machine simulators and created educational modules that teach about designing electronic games, especially slot machine games. For the CD, the graphics and programming were done by Pascale Proulx and a consulting company called We-Create Inc. All programming of the Safe@Play Slot Machine Tutorial was done under my supervision.

13. The Safe@Play Slot Machine Tutorial is an actual working slot machine game that the user can play. That is, the user can simply play the game and not look at the tutorial. The tutorial also includes menus where the user can learn about the game as the user plays the game. The tutorial menus explain the following:

- How the reels are designed;
- What the pay table on the glass panel means;
- The bill acceptor and how much it costs a player to play a slot machine (on average);
- Virtual reel mapping; and
- Random number generators.

14. The tutorial also includes a "primer" that explains the odds when playing a game with a coin, dice, and a wheel.

15. Four sample screen shots from the *Safe@Play Slot Machine Tutorial* are shown below:


Flash
Normal Play
The safe@play Slot Machine tutorial
Go ahead, play the slot machine. Then check out the menu items below.
Normal Play
Options
About us
Inside General
Primer
Inside Advanced
Be safe@play
Exit
safe@play
1ST Coin
2ND Coin
3RD Coin
250
500
750
75
150
225
12
24
36
8
16
24
2
4
6
BAR
Any 2
Any 1
PAYLINE
ACCEPTS
$5, $10, $20, $50, $100
INSERT BILLS
WINNER PAID
CREDITS
$100
COINS PLAYED
CASH OUT
BET ONE
SPIN
BET MAX


Flash
About us
The safe@play Slot Machine tutorial team.
Helping you discover the fundamentals of how the games really work.
Normal Play
Options
About us
Inside General
Primer
Inside Advanced
Be safe@play
Exit
The safe@play Slot Machine tutorial
Version 1.01-CAN
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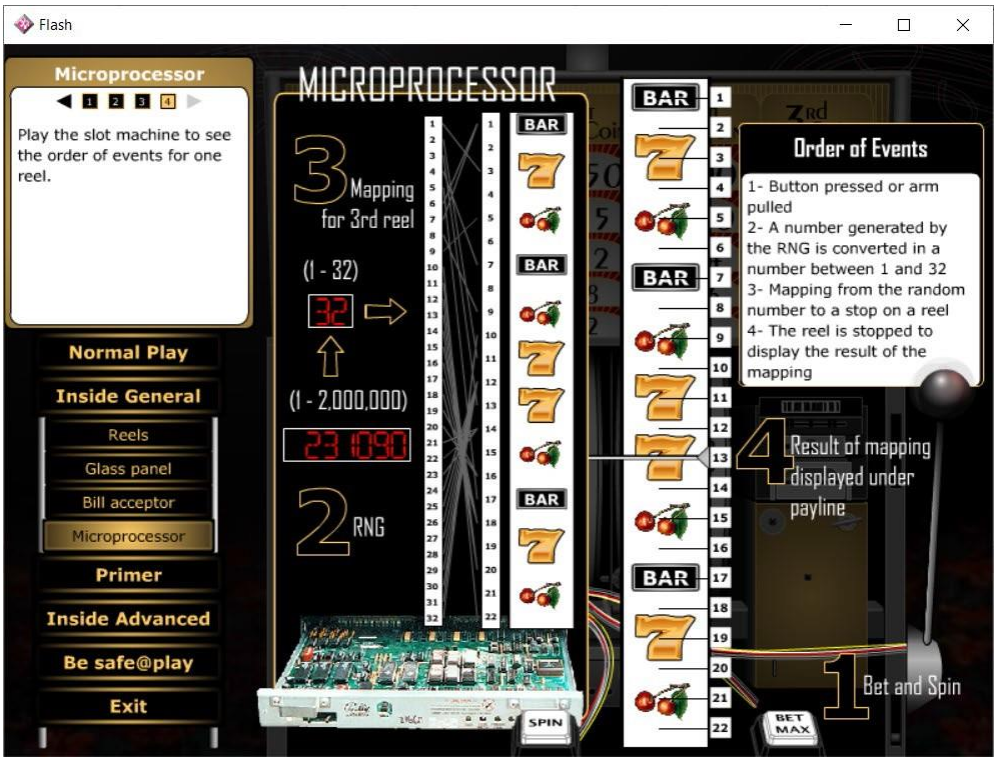
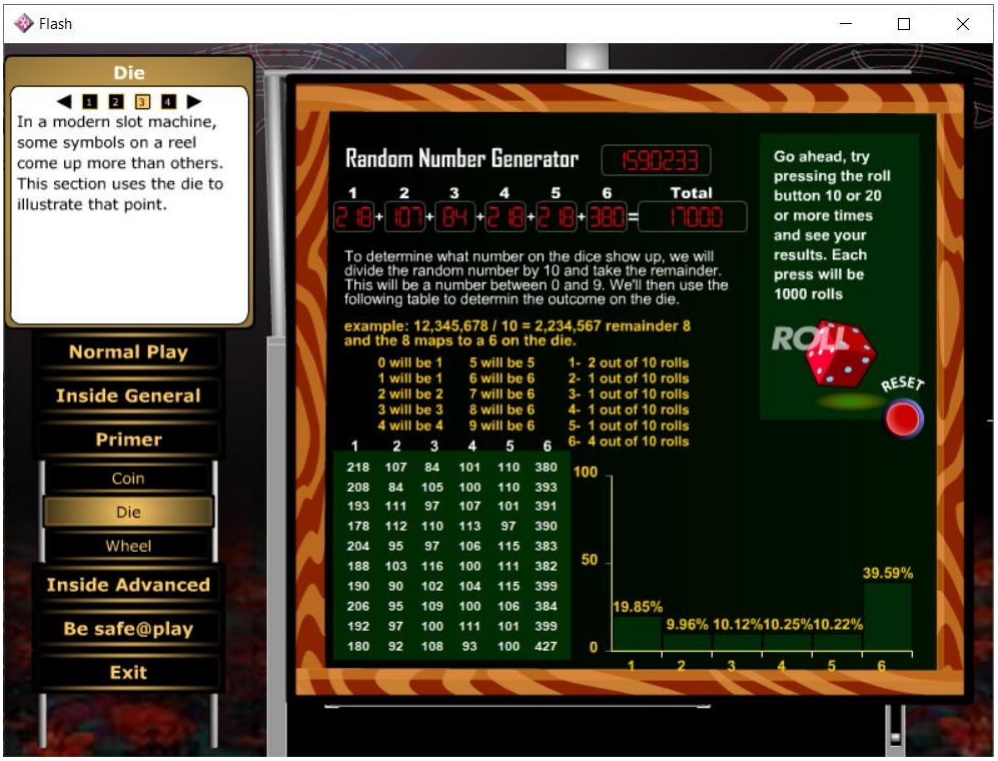
Executive Producer
Dr. Kevin Harrigan, PhD
Responsible Gaming Specialist
Roger Horbay, HSC, NCGC
Creative Director
Pascale Proulx, BA
Development Team
We-Create Inc.
www.we-create.com
519.745.7374





16. In 2002, I received my first research grant related to electronic games and the design of electronic games. Since that time, my colleagues and I have

secured over three million dollars in research funding related to the design of electronic games and the effects on the player.

17. In approximately 2005, I requested and received, through Freedom of Information, the transcripts of the Nevada Gaming Commission 1989/90 hearings regarding the legality of near misses in slot machines in Nevada. In approximately 2005, I spent several months full-time studying these Commission hearings and the Nevada gaming regulations. At the time of the hearings, one manufacturer was creating near misses using a unique/proprietary algorithm and the Commission banned that algorithm from being used in games in Nevada, while allowing near misses by manufacturers who were using the algorithm described in the Telnaes patent. In 2006, I wrote an academic paper which in part described these Nevada Commission Hearings. In 2007, I submitted that paper to an academic journal. That paper was published in 2008 (Harrigan, K. A. (2008). Slot machine structural characteristics: Creating near misses using high symbol award ratios. (*International Journal of Mental Health and Addiction*, 6(3), 353-368)).

18. Since that time, I have had a keen interest in electronic gaming regulations and have studied gaming regulations in detail in various jurisdictions including Nevada, Ontario, Australia, Atlantic Canada, Quebec, and Alberta. In all of these jurisdictions, the jurisdiction establishes the regulations. The manufacturer of the electronic games normally has their games tested by an

independent testing lab to ensure that the games comply with the jurisdictional regulations. I have also studied in detail the documents on the websites of testing labs to understand the testing process (this was mainly the websites of Gaming Labs International (GLI) and BMM). Ontario has its own testing lab. I have visited the Ontario testing lab in approximately 2006 and had discussions with the then head of the testing lab.

19. I published my first peer-reviewed academic journal article on the design of electronic games in 2007, entitled Slot Machine Structural Characteristics: Distorted Player Views of Payback Percentages in the *Journal of Gambling Issues*. Since then, I have co-authored 32 peer-reviewed academic journal articles all related to the design of electronic gaming machines, particularly slot machine games, and the effect of playing those games on the player.

20. In 2008, I co-founded the Gambling Research Lab at the University of Waterloo and currently serve as co-director of the Lab. My research at the lab relates to understanding the math and computer algorithms used in the design of electronic game machines, especially slot machine games. I direct Knowledge Translation and Exchange initiatives at the Lab, including creating videos and tutorials on how electronic games are programmed and responding to media inquiries.

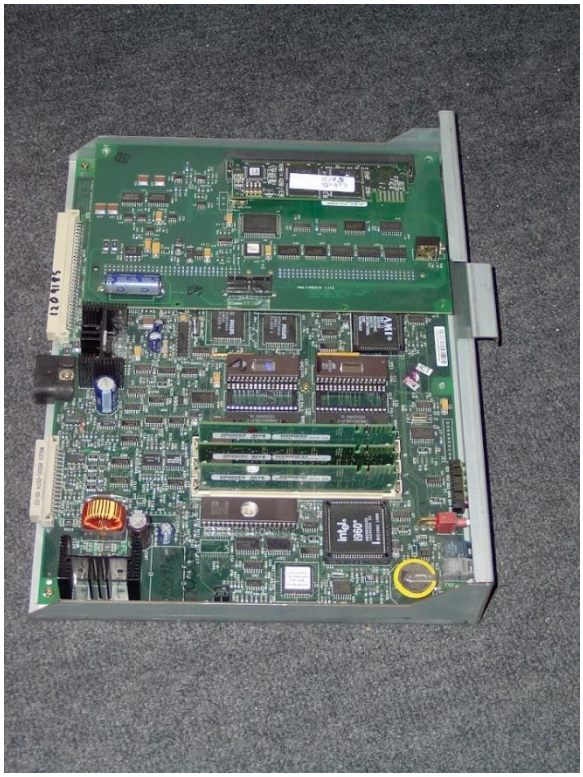
21. In approximately 2009, we purchased used slot machines for our Gambling Research Lab. We use these slot machines for research and for Knowledge Translation. The used slot machines are working slot machines including all the hardware and software for running the games. The slot machines include:

- Lucky Larry's Lobstermania:

- Money Storm:

- Blazing 7's, Triple Stars, and Wild Thing!:

22. All of our slot machines have the games on EPROMS (erasable read-only memory) on the motherboard inside the slot machine. We have access to the setup menu and can make configuration changes such as changing the denomination of the game (for example, from a 5 cent machine to a 25 cent machine) or changing the Payback Percentage on the machine (for example, from 85% to 98%). Each machine typically has 6-10 different Payback Percentages of the same game on the EPROM. Many times, as part of changing the setup configuration, I have had to remove and replace the game chips with other security chips that were included in our purchase of the slot machines.



23. An example use of the slot machines for research is that we had players play one Lucky Larry's Lobstermania machine which was set at 85%

Payback Percentage and another Lucky Larry's Lobstermania machine set at 98% Payback Percentage for 30 hours each (60 hours total) to determine whether the players could discriminate between the versions (Dixon, M., Fugelsang, J., MacLaren, V., & Harrigan, K. (2013). Gamblers can discriminate 'tight' from 'loose' electronic gambling machines. (*International Gambling Studies*, 13(1), 98-111)).

24. An example of the use of the slot machines for Knowledge Translation is the creation of educational videos, called "Video Stories", where we show various aspects of the games, such as explaining near misses and how one or more slot machines can have multiple versions of the same game. *See* https://uwaterloo.ca/gambling-research-lab/about/video-stories and https://youtu.be/q7Jl75oRoa8.

25. I co-founded the University of Waterloo Games Institute in 2012 through an "IMMERSE The Research Network for Video Game Immersion" grant. I served as co-chair of the University of Waterloo Gamification conference in 2013.

26. I have been interviewed by the media 38 times about the design of electronic gaming machines, particularly slot machine games, including interviews with "60 Minutes" and *The New York Times* in the United States, "Fifth Estate" in

Canada, *The Sydney Morning Herald* in Australia, and for several documentaries in French and English in Canada and Australia.

27. I have served as an expert in legal cases in Canada, the United States, and Australia. I have also served as a consultant in one *inter partes* review proceeding, one Covered Business Method (CBM) proceeding, and two bankruptcy cases. My expertise in all cases is related to some extent to algorithms used in the design of electronic game machines, including slot machine games.

III. ASSUMPTIONS AND UNDERSTANDINGS

28. My analysis is based on certain assumptions and understandings including the following and those specified further in the sections below:

a. I am not trained in U.S. law. Plaintiffs' Counsel consequently has provided me certain statements of the pertinent law, which are set forth herein. I assume them to be true and understand them sufficiently to apply them to the facts of this case.

b. Among the legal concepts provided to me, I understand the issuance of a patent is prima facie evidence of the patent's compliance with all of the requirements of patentable subject matter, novelty, non-obviousness, compliance with written description, and compliance with the enablement and definiteness requirements. Defendants must prove invalidity by clear and convincing evidence.

I further understand and assume that clear and convincing evidence means that the evidence is highly probable and substantially more likely to be true than untrue.

c. I understand that certain claims of the 223 Patent have been disclaimed. I understand that this means that Savvy Dog is no longer asserting these claims. My analysis is with regard to the remaining claims, which the Friedman Report refers to as the Challenged Claims. The fact that certain claims have been disclaimed has not impacted my analysis or conclusions.

d. I understand that Defendants filed a motion to dismiss on the basis that the claims of the 223 Patent are patent ineligible because they supposedly simply encompass abstract subject matter. I further understand that the Court found the claims (focusing on Claim 44 as a representative claim for purposes of the motion to dismiss) to be abstract under Step One of the pertinent test, but found there were issues of fact as to Step Two which warranted the denial of the motion. I have not been asked to express any opinions with regard to Step One or the Court's ruling on Step One, and express opinions herein with respect to the application of the facts and my expertise to Step Two. *See* Section VIII, below.

e. I understand that, in general "prior art" includes information that demonstrates the state of technology that existed before the claimed invention was made or before the application was filed.

f. I further understand that the Leahy-Smith America Invents Act ("AIA") is a United States federal statute that was passed by Congress and was signed into law on September 16, 2011. I am advised that the AIA became effective in 2013. For pre-AIA patents, I am further advised that prior art may include items that were publicly known or that have been used or offered for sale, or references, such as publications or patents, that disclose the claimed invention or elements of the claimed invention. To be prior art, the item or reference must have been made, known, used, published, or patented either before the invention was made or the "Bar Date," which is more than one year before the filing date of the patent application (in this case, the bar date is on or before June 30, 2005).

29. I also understand that the Court has construed certain terms in the asserted claims. I assume the correctness of the Court's constructions but have formed no independent opinions regarding their correctness. The Friedman Report raises an additional issue as to the construction of the term "automatically" in the context of an "automatic display," and whether the term precludes any manual activity. Consequently, understanding that claim construction is performed by the Court, I provide below my technical views as to the meaning of "automatically."

IV. LEVEL OF ORDINARY SKILL IN THE ART

30. I have reviewed Section IV of the Friedman Report entitled "Level of Ordinary Skill in the Art." The following are my agreements and disagreements with the statements in Section IV.

31. Plaintiffs' Counsel has informed me and I assume that the Friedman Report, in Paragraph 15, correctly summarizes the factors that should be considered when determining the level of skill of a person of ordinary skill in the art (sometimes referred to as a "POSITA") with respect to the patent claims at issue: "the education level of those working in the field, the sophistication of the technology, the types of problems encountered in the art, the prior solutions to those problems, and the speed at which innovations are made[.]"

32. Plaintiffs' Counsel also has informed me and I assume that the Friedman Report is correct that the characteristics of POSITA should be determined at the time of the invention. There is a debate between the parties, as reflected in Paragraph 16 of the Friedman Report, regarding the date of invention: Defendants contend it is June 30, 2006, while Savvy Dog contends it is no later than May 2, 2006. I address this disagreement in detail herein, especially regarding the Kowell provisional application. However, I do agree that, for purposes of determining the characteristics of POSITA, this temporal difference is inconsequential.

33. The Friedman Report concludes as follows regarding the characteristics of a POSITA for purposes of this case: "at least a bachelor's degree in computer science, engineering, or equivalent education and at least two years of experience with designing and developing electronic games." (Friedman Report, ¶ 17). I agree that this is one set of characteristics of a POSITA, but it improperly excludes designers and developers of electronic games that do not have a college degree. In my experience, a number of successful designers and developers of electronic games are self-taught. This is the case with Mr. Pace and, as noted, is in no way is anomalous. Consequently, I would expand on the definition of the characteristics of a POSITA from the Friedman Report resulting in the following definition: a person with "at least a bachelor's degree in computer science, engineering, or equivalent education and at least two years of experience with designing and developing electronic games. Or a person who through self-teaching and actual design and development work acquires the skill level of the foregoing."

34. Based on my education and experience as set forth above in Section II, I can speak to the knowledge and abilities of POSITA at the time of the invention. My skill level at that time was at least as high as the aforementioned definition of POSITA.

V. CLAIM CONSTRUCTION

35. As noted above, I understand that the parties have debated the meaning of certain terms in the asserted claims, and the Court has issued a ruling construing the meaning of the disputed terms. I assume these constructions to be correct and apply them in my discussion and analysis in this report, whether expressly or implicitly. I have, however, not been asked to nor have I made any independent determination regarding the correctness of the Court's conclusions. I have formed no opinions thereon.

36. The Friedman Report contends that certain source code Savvy Dog points to as support for the May 2, 2006 date of invention does not show the display of the game to be played happening "automatically." This may depend on the proper construction of "automatic[ally]" as used in the context of automatic display of an actual game to be played. While the Friedman Report offers no express construction of "automatically" in this context, he implicitly construes it to preclude any associated manual step. Because the Court has not construed "automatically," I will address the issues in this report using the implicit construction of the Friedman Report, and, alternatively, using a construction of "automatically" that means a machine process that includes (not precludes) an associated manual step.

37. The 223 Patent reveals multiple embodiments that a POSITA would understand could be used to display an actual game to be played, including an embodiment of the invention that is triggered by depressing the NEXT PUZZLE button, and another which is not. Claim 45's disclosure regarding the adjacent next puzzle feature (no manual trigger whatsoever) arguably shows that both embodiments are being claimed in Claim 44. (223 Patent, at 17:3-6 ("The electronic gaming system of claim 44 further comprising a component for generating and displaying an additional game field simultaneously on the game display in proximity to the displayed game.")).

38. Exemplary portions of the specification include the following:

- "FIG. 6 illustrates the processing logic for an exemplary embodiment of the invention having a game preview display." (223 Patent, at 3:32-33).

- "The game software can then construct and display a new game field as indicated in step 618. The game display is constructed using the same rules described herein. Referring to FIGS. 1A-1B, the player can select the 'Next Puzzle' or similarly labeled buttons to preview the next game. By selecting the play level (i.e., denomination of play), the player can preview the next game at the selected play level. The player can preview the next game at each play level before choosing the game to play. The game software then waits for the current player to

decide whether or not to play the new game displayed as indicated in decision step 620." (*Id.* at 10:63-11:7).

- "The preview screen of the present invention can be used in various additional embodiments." (*Id.* at 11:14-15).

- "A preview of the next game could be displayed adjacent to the current preview screen. In order to get to the next game, the player would have to play the currently previewed game. An example of such a game display is depicted in FIG. 7 in which the current game is previewed on the main portion of the display and the next game (e.g., at the same play level or denomination) is displayed adjacent to the current game display in the upper right portion of the display." (*Id.* at 11:27-34).

VI. SUMMARY OF THE INVENTION OF THE 223 PATENT; TTF AND KOWELL; THE DATE OF THE INVENTION; THE OCTOBER 2005 HEARING; NUDGEMASTER

A. Summary of Key Aspects of the Invention of the 223 Patent

39. In this subsection, I provide a summary of my view of the invention and novelty of the 223 Patent. I set forth my detailed analysis, including the discussion of the validity of the Challenged Claims, in the above and below sections and subsections.

40. Before the invention on or before May 2, 2006, to my knowledge, there were no electronic games in which the player could preview the outcome of

the game before committing to playing that game. According to Mr. Pace, in connection with an October 2005 Hearing in the matter of *In re: FOE Aerie 2171*, the State of Ohio's gambling expert, William Riedthaler, told Mr. Pace the following regarding what would be needed in an electronic game to allow that game to be considered a skill-based game under the laws of Ohio: "[W]ell, the biggest problem I have is that the players don't know what they're playing for[.]" (August 4, 2021 Deposition of Michael Pace ("Pace Dep."), at 89:17-19).

41. After Mr. Riedthaler made that statement, Michael Pace considered various ways in which he could satisfy the requirement that players needed to know what they were playing for. As an example, he discussed with Ohio Skill Games ("OSG") and attorney Kurt Gearhiser the idea of displaying the paytable with the next outcome, such as three oranges, highlighted:

> I had talked with Ohio Skill Games and Kurt Gearhiser about it. And they were thinking that really what the right way to implement this would be to highlight the tiers in the pay table, like if you were going to win oranges next time, to light up the orange part of the three oranges in the pay table, or the rewards chart. I did not like that idea…

(Pace Dep., at 100:13-20).

42. Mr. Pace ultimately decided to implement the preview feature (and related pre-fetch feature, *see* Pace Dep., at 40:25-41:3) as his way to address the issue that the current TTF game was not a skill game because "players don't know what they're playing for". In January through March 2006, Michael Pace did

substantial work relating to the redesign and new programming to convert his previous TTF game, to a TTF game with a preview display (and related pre-fetch), in which the player could see the entirety of the next game to be played (meaning the puzzle in its complete state prior to the placement of any wild symbols) before deciding whether to play that game. About the effort required to implement the preview, Mr. Pace said it required a "… total reworking of the system, because in order to build a preview into it, I had to develop something called a pre-fetch. That was a great deal of coding. It was just one of those things that sounds like it should have been simple, but in my system, it was incredibly difficult, but I did get it done." (Pace Dep., at 68:10-15). By no later than May 2, 2006, Mr. Pace had implemented the TTF game with a NEXT PUZZLE button which, if pressed by the player, would cause the game processor to generate a puzzle, test the puzzle for compliance with an algorithm designed to control the winning combinations for each game field to make sure that the placement of random symbols on the game field has not created potentially more valuable winning combinations than those originally planned, and display a preview of the entire puzzle game board for the next game to be played, as further detailed in Section VI(D) below.

43. In considering the design of an electronic game prior to the invention of the 223 Patent in early 2006, I would never have expected that having a game that generates the field, tests that field for compliance with an algorithm designed

to control the winning combinations for each game field to make sure that the placement of random symbols on the game field has not created potentially more valuable winning combinations than originally planned, and allows the user to see a preview of that entire game field before the player commits to playing the game, would be a game that players would desire to play. Indeed, such a design was counterintuitive in that it affords the player an unparalleled advantage in assessing whether to commit funds and play the game. The below two scenarios exemplify why a POSITA would have expected the game to be unsuccessful:

- Scenario (part 1): Let's assume that a player, called Player A, played the game for some time and received various sized wins and losses as would be expected in a gambling or skill-based game. In this scenario, after playing for a while, let's assume Player A would like to quit playing soon. Given that Player A can see a preview of the next game to assess its outcomes, Player A would know whether the next game's outcomes would be a win that would likely exceed the cost to play the game. If the next outcome is a win of high enough value, Player A would probably play that to get the win and realize that value. If the next game previewed projects the inability to generate a win of high enough value to exceed the cost of playing, then Player A would not play and decide to quit playing as planned.

- Scenario (part 2): Another player then arrives to play on the same game machine. I will call this player Player B. The game preview shows Player B that the next game field to be played is not going to result in enough of a win to recover the cost of playing (note that this is because Player A quit playing when the preview showed the next game field associated with an unfavorable outcome). In order to begin playing this game, Player B would need to accept an unfavorable outcome on his/her first play to begin playing that game.

44. As detailed below, the Friedman Report fails to provide clear and convincing evidence that the Challenged Claims of the 223 Patent are invalid. Indeed, the affirmative evidence weighs in the other direction.

B. Pace-O-Matic, Inc., Background on the Tic Tac Fruit Game, Tic Tac Fruit Source Code, Tic-Tac-Fruit Game Inspection and the Friedman Report's Opinion that the Kowell Patent is Evidence of Near Simultaneous Invention by Another

45. I have been advised by counsel of the following legal principles relating to inventorship and the date of invention:

- The person who first conceived of the claimed invention and first reduced it to practice is the inventor.

- Conception is the mental part of an inventive act and is proven when the invention is shown in its complete form by drawings, disclosure to another or other forms of evidence presented at trial.

- The test for conception is whether the inventor had a definite and permanent idea of the complete and operative invention. Conception is complete when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.

- The conception analysis necessarily turns on the inventor's ability to describe his invention with particularity. Until he/she can do so, he/she cannot prove possession of the complete mental picture of the invention.

- An inventor need not know that an invention will work for its intended purpose in order for conception to be complete, as verification that an invention actually works is part of its reduction to practice. A claimed invention is "reduced to practice" when it has been tested sufficiently to show that it will work for its intended purpose or when it is fully described in a patent application filed with the United States Patent and Trademark Office.

- Where there is a challenge to inventorship, or the date of invention, the inventor must prove his conception by corroborating evidence, preferably by showing a contemporaneous disclosure. Whether the inventor's testimony has been sufficiently corroborated is evaluated under a "rule of reason" analysis. Under this analysis, an evaluation of all pertinent evidence must be made so that a sound determination of the credibility the inventor's testimony may be reached.

Corroborating evidence may take many forms. For example, reliable evidence of corroboration may come in the form of physical records that were made contemporaneously with the alleged invention.

46. The Friedman Report includes a section on "near simultaneous invention" by others. I understand that the possibility of "near simultaneous invention" by two or more equally talented inventors working independently may or may not be an indication of the obviousness of an invention when considered in light of all the circumstances. Where it applies, the concept of "near simultaneous invention" requires evidence that the later invention was independently made, and made within a comparatively short space of time. As discussed below, I see no credible support for "near simultaneous invention" in this case.

47. My understanding is the Michael Pace is the founder, owner and chief executive of POM, a game design company based in Duluth, Georgia. Pace created an electronic game called Tic-Tac-Fruit, which was distributed in the State of Ohio. Pace performed all of the coding for TTF. (Pace Dep., at 39:21-25).

48. My understanding is that POM had relationships with gaming distributors in Ohio, through which Tic-Tac-Fruit machines were distributed. One example of an Ohio distributor was OSG. According to Grant "Fuzzy" Kowell, who was affiliated with OSG:

> [Pace] never sent anyone up here to teach us, and he built the machines and did everything, and if we got in trouble, we would call

> him, and his people in Georgia would very graciously help us through whatever problem we encountered. And so we just learned it by hook and by crook.

(December 3, 2009 Deposition of Grant Kowell (the "2009 Kowell Dep."), at 76:9-14 (emphasis added)).

49. During Ron Carrara's employment with POM, he worked closely with Michael Pace as he was developing electronic gaming technology to be offered to the public. Specifically, when Mr. Pace was developing source code for a new POM game or a new version of an existing POM game, he would typically work on his own. As Mr. Pace developed new code, he would have Mr. Carrara review the source code. (August 30, 2021 Declaration of Ronnie Michael Carrara ("Carrara Dec."), ¶ 3).

50. Mr. Carrara recalls Mr. Pace developing source code to implement a preview feature for the Tic-Tac-Fruit game permitting a game player to view the game symbols of a fully-constructed game for the actual game to be played prior to the player's decision to play the game. (Carrara Dec., ¶ 4).

51. The Friedman Report states at Paragraph 112 that on April 23, 2021, Mr. Friedman received source code and binary files produced by Plaintiffs.

52. The Friedman Report states that it presumes that the source code files were for Tic-Tac-Fruit version 5.24 (sometimes referred to as "TTF524") as indicated by Plaintiffs in their interrogatory responses. (Friedman Report, ¶ 113).

Dan Trueblood of POM has confirmed that he was responsible for preparing the source code that was produced to the Defendants and reviewed by Mr. Friedman, and that it was source code for TTF524. The source code files identified in the following paragraphs are from TTF524 and dated no later than May 2, 2006.

53. The Friedman Report states that the Windows last-modified-date for ATEUP.C, ATEUP.H and RNGATEUP.C files – files which relate to the Tic-Tac-Fruit game, are 5/1/2006, 4/27/2006, and 4/30/2006 respectively. (Friedman Report, ¶ 114).

54. The Friedman Report states that the last-modified-date for the compiled object files corresponding to those source files (namely ATEUP.OBJ and RNGATEUP.OBJ) is May 2, 2006. (Friedman Report, ¶ 114).

55. The Friedman Report at Paragraph 115 states that within RNGATEUP.C, the function ateup_calcRNGnetwork at lines 278-554 performs field construction and testing functionality similar to the 223 Patent specification at 4:51-64. It states that this is also similar to the description of field construction and testing for earlier versions of Tic-Tac-Fruit in the November 15, 2004 Report by Clay Turner (the "Turner Report"), at POM000497.

56. The Turner Report described the older, prior art version of Tic-Tac-Fruit, where the steps of field construction and testing functionality that occurred in creating the game field for the player to play occurred after only the player

committed funds to play the game. Tic-Tac-Fruit in the prior art, without more, was incapable of being combined with a game preview feature. This is because prior art Tic-Tac-Fruit was incapable of deploying the processes related to field construction and testing unless a player had committed funds and pressed play. Mr. Pace so testified:

> The first thing that had to happen in the system is it took several months to rewrite the whole way everything worked, because we had, beforehand, generated puzzles on the fly that did not work the same way as we did after that, because we needed to be one step ahead and one move ahead in the creation of these puzzles, if we were going to allow the player to glean any information about what type of puzzle it was, what you could possibly win, and the difficulty of it.
>
> That took place during that time period. A total reworking of the system, because in order to build a preview into it, I had to develop something called a pre-fetch. That was a great deal of coding. It was just one of those things that sounds like it should have been simple, but in my system, it was incredibly difficult, but I did get it done.

(Pace Dep., at 67:24-68:15 (emphasis added); *id.* at 93:9-13 ("But there was a great deal of work that had to take place in my operating system in order to be able to even think about doing a preview, 'cause it wasn't set up to do it.")).

57. Mr. Pace alone appreciated the need and difficulty involved in developing this pre-fetch feature that would permit Tic-Tac-Fruit to generate and test complete game fields before rather than after the player had committed funds and pressed play to initiate a game.

58. The Friedman Report states at Paragraph 115 that the actual testing process in the source code is more detailed than the high-level steps disclosed in the Turner Report or patent specification. The Friedman Report does not dispute Pace's claim that the testing process in the source code had to be altered from prior art Tic-Tac-Fruit in order for it to work with any type of game preview that is rooted in showing a player the constructed game field before the player commits to play the game.

59. The Friedman Report also states at Paragraph 115 that the testing process in the source code is implemented in a way that "may never succeed (as is Turner's description)." As explanation, the Friedman Report states that "a POSITA would understand that if a constructed field can be tested and found non-compliant once, it can be tested and found non-compliant again, which means that the field construction and testing process described in the patent specification may never complete successfully." (Friedman Report, ¶ 115). However, the Friedman Report states that this issue is addressed in the source code, "by returning an error condition if compliance testing fails 100 times." *Id.* And in any event, the Friedman Report makes no effort to quantify and document any appreciable failure rate. The Friedman Report does not indicate any observation of any such operational failure or errors. I address this point in further detail below.

60. The Friedman Report states that within ATEUP.C, the function ateup_betting at lines 1557-2089 handles certain button inputs from the player after the previous game has concluded, including pressing a help button, raising or lowering the bet, pressing the "PLAY" button, or pressing the "NEXT PUZZLE" button. (Friedman Report, ¶ 117).

61. The Friedman Report states based on an apparent review of the TTF524 source code that TTF524 can be configured to enable or disable the NEXT PUZZLE feature depending on whether the "ateup_previewoption" flag is set. If the flag is set, the software displays a button that reads "NEXT PUZZLE" with code ATB_ATEUP_PREVIEW and a button that reads "PLAY" with code ATB_ATEUP_NARROWPLAY; if the flag is not set, the software displays only a button that reads "PLAY" with code ATB_ATEUP_PLAY button. ATEUP.C at 1643-1663." (Friedman Report, ¶ 118).

62. According to the Friedman Report, "the NEXT PUZZLE display never occurs automatically in the [TTF524] source code I have reviewed." (Friedman Report, ¶ 121). Yet the Friedman Report reveals that the NEXT PUZZLE display occurs in the source code after the NEXT PUZZLE button is pressed. According to the Friedman Report, assuming the NEXT PUZZLE "ateup_previewoption" functionality flag is set, if the player presses the NEXT PUZZLE button, the following automated process occurs: "a button-press message

with code ATB_ATEUP_PREVIEW is processed that leads to the game temporarily displaying the next puzzle (field of symbols) on the screen instead of the previous game display (the display of the last game that was played by a player). The [source code] function ateuptask_reelmotion at lines 4606-4828 is called to perform this display. (Friedman Report, ¶ 119). Next, the Friedman Report states that after a few seconds, the previous game played is redisplayed on the screen (also using function ateuptask_reelmotion) and the ateup_betting function returns to waiting for the next button press, citing ATEUP.C at 1759-1910, 1974-2050. (*Id.*, ¶ 119).

63. The Friedman Report next states:

> If the player instead presses the PLAY button, a button-press message with either code ATB_ATEUP_PLAY or ATB ATEUP NARROWPLAY is processed that leads to the gameplay processing and ultimately calls the function ateup_action at lines 2200-2411 (the configuration flag discussed above determines whether the PLAY or NARROWPLAY message is sent, but the processing for both messages is handled by the same code). The function ateup_action displays the symbols using either (i) the function ateuptask_reelmotion or (ii) the function ateuptask_spinreels at lines 4831-4946. In other words, the function used to display the game symbols of the NEXT PUZZLE and then revert the screen to the previous game played is one of the same functions used to display the game symbols upon initiating gameplay.

(Friedman Report, ¶ 120).

64. The Friedman Report opines at Paragraph 122 that "I disagree that a game which requires the player to press a NEXT PUZZLE button in order to

prompt the game to temporarily display a next game to be played is an embodiment of any of the Challenged Claims, all of which include the 'automatically displaying' limitation." (Emphasis added).

65. From the perspective of a POSITA, a fair reading of Paragraph 122 of the Friedman Report is that the player pressing the NEXT PUZZLE button in a game created by compiling the TTF524 source code would "prompt" or trigger an "automatic display" process that is outlined in the source code above as follows: "a button-press message with code ATB_ATEUP_PREVIEW is processed that leads to the game temporarily displaying the next puzzle (field of symbols) on the screen instead of the previous game display [the display of the last game that was played by a player]. The [source code] function ateuptask_reelmotion at lines 4606-4828 is called to perform this display." (*Id.*, ¶ 119).

66. Ultimately, the question of whether TTF524 source code, if compiled, would constitute a reduction to practice of the invention of the claims of the 223 Patent may boil down to how the Court construes "automatic display" as that term is used in the 223 Patent. If the Court adopts the construction that the Friedman Report at least implicitly advocates – a display process that is not triggered in any way by a manual action – then the TTF524 source code is not technically following the language of the claims. In that case, the reduction to practice would be Mr. Pace's filing of his patent application on June 30, 2006. If the Court does

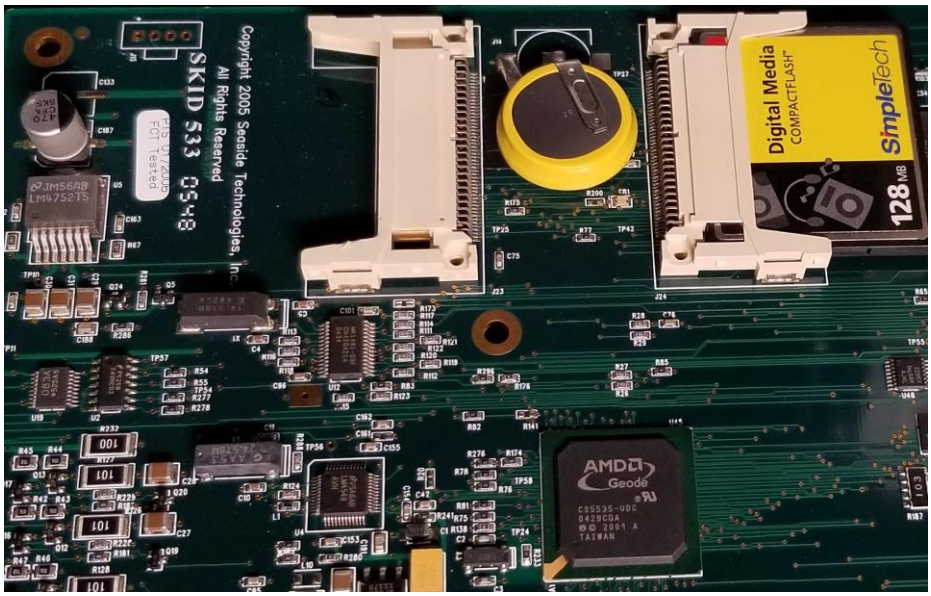
not adopt a construction of the term as narrow as the one relied upon in the Friedman Report, the TTF524 source code represents a reduction to practice of the claims of the invention.

67. The Friedman Report states in Paragraph 123 that on August 31, 2021, Mr. Friedman visited the POM office and inspected five gaming devices. According to the Friedman Report, "[e]ach of these machines was running software that Plaintiffs contend is an embodiment of one or more of the Challenged Claims. *See* Plaintiffs' Seventh Supplemental Responses to Defendants' First Set of Interrogatories at 16-18, 21-23 (for Tic-Tac-Fruit version TTF527GPX); Plaintiffs' Sixth Supplemental Responses to Defendants' Second Set of Interrogatories at 3-14 (for all other games)." (*Id.*).

68. The Friedman Report indicates that Mr. Friedman spent approximately one hour evaluating the TTF527GPX machine. (Friedman Report, ¶ 123). On November 4, 2021, I also spent approximately an hour evaluating the same TTF527GPX machine.

69. According to the Friedman Report, "One device was running version TTF527GPX of Tic-Tac-Fruit. Internal inspection revealed a gaming board that appears to be a version of the board depicted in Exhibit B of the declaration of Mr. Cummings, and described as the 'Skidmore' board by Mr. Pace. Pace Tr. at 48:2-21, 56:4-9." (Friedman Report, ¶ 124).

70. The Friedman Report included a photo of the motherboard in question, including a Compact Flash card containing ROM image files which, in operation, comprise computer code configuring the game processor on the game motherboard:



71. The Friedman Report further states that the "depicted AMD Geode CS5535 is a 'companion chip' to the CPU itself, which was obscured by a heatsink for this particular board, but the AMD Geode CPU can be seen on the Skidmore board in Exhibit B of the Cummings Declaration." (Friedman Report, ¶ 124 n.6).

72. The AMD Geode CPU is circled in red in Exhibit B to the Cummings Declaration, shown below:

73. According to the Friedman Report, Paragraph 125, "My play of the game, including the operation of the NEXT PUZZLE button, corresponded with the behaviors described in the source code analysis above." By "source code analysis above," the Report is referencing the analysis of TTF524 source code of May 2, 2006 (or earlier), as discussed above. This part of the Friedman Report thus admits that the May 2, 2006 TTF524 source code, if compiled, would function just as TTF527 functioned. Therefore, the TTF527 gaming terminal corroborates a

date of conception and reduction to practice of Tic-Tac-Fruit having a game preview screen at least as early as May 2, 2006.

74. The Friedman Report provides the following photo taken by Mr. Friedman taken from the game terminal he inspected that implemented TTF527, which shows the "NEXT PUZZLE" button, which a player can press before committing to play the game:

(Friedman Report, ¶ 125).

75. The Friedman Report also shows a photo taken depicting an exemplary next game to be played at $0.50 which the game terminal generated and displayed in response to the pressing of the "NEXT PUZZLE" button before the player pressed PLAY.

(Friedman Report, ¶ 130).

76. Although the Friedman Report, as noted above, states elsewhere that "a POSITA would understand that if a constructed field can be tested and found non-compliant once, it can be tested and found non-compliant again, which means that the field construction and testing process described in the patent specification may never complete successfully," there is no record of the game failing in practice due to any such "error." My own inspection of the TTF527 terminal confirms that the game did not fail in practice due to any such error.

77. The Friedman Report opines that "Tic-Tac-Fruit version TTF527GPX does not 'automatically display an actual game to be played' but requires the player to press a NEXT PUZZLE button in order to observe the next game to be played." (Friedman Report, ¶ 133). This conclusion is based on the same claim

construction of "automatic display" that I discussed above in relation to the TTF524 source code.

78. According to the Friedman Report, Paragraph 135, the flash card from the game board of the terminal having TTF527 was removed and installed on a Windows laptop where Mr. Friedman could examine its contents. The Friedman Report states that the contents of that CompactFlash card included "four ROM images named TTF527.U4, TTF527.U6, TTF527.U7 and TTF527.U9, with last-modified-dates of June 9, 2006," and further states that Mr. Friedman "confirmed via checksums that these files were identical to those produced in POM018460 and depicted in the above Interrogatories at p. 23." (*Id.*).

79. The Friedman Report states that "a file called OS.BIN was also on the CompactFlash card. I understand OS.BIN to implement software emulation of the Pot-of-Gold boards. Pace Tr. at 48:14-21, 56:4-17, 58:1-3. The last-modified-date of OS.BIN was 10/25/2005. Other than OS.BIN and the four ROM images, the only other files on the CompactFlash card were 272 files with numbered filenames in the SOUNDS directory, all with last-modified-date of 8/5/2005. Therefore, the emulator software required to run version TTF527GPX of Tic-Tac-Fruit on the machine I played was from 10/25/2005 or earlier and thus existed long-before the alleged date of invention. Similarly, the hardware required to run version

TTF527GPX of Tic-Tac-Fruit was a motherboard with a copyright date of 2005, also before the alleged date of invention." (Friedman Report, ¶ 136).

80. Based on the descriptions of the OS.BIN files, the SOUNDS directory and the hardware date of the motherboard, I conclude that the ROM images of TTF527 – TTF527.U4, TTF527.U6, TTF527.U7 and TTF527.U9, with last-modified-dates of June 9, 2006 – comprising computer code for configuring the game processor of the motherboard to implement the Tic-Tac-Fruit with game preview screen described above. As noted, the Friedman Report indicates that the source code associated with this object code is dated May 2, 2006 or earlier. (Friedman Report, ¶ 115).

81. As a vice president of POM with responsibilities for sales, Mr. Carrara communicated frequently with POM's distributors, including OSG. (Carrara Dec., ¶¶ 2, 5).

82. After Mr. Pace had developed the preview feature software described above, but before the new software was commercially released, Mr. Carrara had a telephonic conversation with Grant "Fuzzy" Kowell, who was affiliated with OSG. During the call, Mr. Kowell asked Mr. Carrara to provide him with a sample game board containing a game processor configured with a version of TTF to implement the new Tic-Tac-Fruit preview feature based on the new source code created by

Pace. Mr. Kowell explained that he wanted to "test" one of these boards, in his capacity as a POM distributor. (Carrara Dec., ¶ 6).

83. In response, Mr. Carrara shipped Mr. Kowell a game board to satisfy his request. Mr. Carrara recalls that his action was undertaken prior to any commercial release of the new version of Tic-Tac-Fruit incorporating the aforementioned preview feature. (Carrara Dec., ¶ 7).

84. I understand that Mr. Kowell did not have a recollection of receiving a game board with preview on it from Mr. Carrara prior to the date his patent attorney first filed a patent application relating to the preview feature (which, as shown below, was June 21, 2006). (September 2, 2021 Deposition of Grant "Fuzzy" Kowell ("Kowell Dep. II"), at 43-44). However, Mr. Kowell also testified that POM "brought tons of boards to us. Remember we were on Tic-Tac-Fruit for -- Tic-Tac-Fruit as a skill game. This is something that happened a few years later that we had to put on the preview feature. So Ron could have brought three, four. Mike made different games and stuff different ways, procedures, and improvements." (*Id*., at 43:16-22). Thus, it is apparent that as Mr. Pace changed the Tic-Tac-Fruit game, Mr. Kowell was provided exemplary game boards. He simply doesn't remember the timeline. (*Id*. at 45:7-10, where he testified that he was discussing during his deposition with his attorney Kurt Gearhiser that "We were just talking about Mike coming up or Ron Carrara. You know, timelines, all

that stuff, this late in the game are just all mixed up. We don't know exact dates or anything.").

85. I have also reviewed the attorney bill from Womble Bond Dickinson dated July 20, 2006 to Michael Pace at POM (the "Womble Bill") for work relating to the patent application leading to the issuance of the 223 Patent. (*See* POM000949-POM000952). The Womble Bill describes a three and a half hour long period of time during which there was a meeting on June 5, 2006, between patent prosecution attorney John Timar, who prosecuted the application leading to the 223 Patent, with "McKenzie Perry [then the general counsel of POM], Dan Trueblood [a POM technical employee] and John Taylor to discuss new patent applications for 'Tic-Tac-Fruit with Preview Screen' and 'Ohio Nudge Game with Wild Symbol'; research of the patent database for nudge-type electronic gaming patents; and preparation of a patent application drawing for 'Tic-Tac-Fruit with Preview Screen.'" (POM 000951).

86. Mr. Pace testified that POM had an internal process relating to patenting his inventions, and that he rarely involved himself personally with patent attorneys in matters relating to the pursuit of patents on his inventions. (Pace Dep., at 106-107).

87. The Womble Bill shows that from June 6 through June 21, Mr. Timar expended an additional 11.7 hours drafting the patent application for "Tic-Tac-Fruit with Preview Screen."

88. The Womble Bill shows that on June 22, Mr. Timar spent 1.2 hours reviewing and revising a "complete draft" of patent application for "Electronic Gaming Method and System Having Preview Screen."

89. I have also reviewed a Memorandum of Understanding settlement agreement in the matter of the *State of Ohio v. Mayle*, Franklin County, signed on June 23, 2006 (the "Mayle Settlement Agreement", POM002387-POM002390). This agreement corroborates the fact that as of June 23, 2006, Tic-Tac-Fruit game terminals versions 5.24 and 5.27 were already commercially released and being used in Ohio, at least by Jeff Mayle. (Mayle Settlement Agreement, at POM002388-2390). My understanding from Plaintiffs' Counsel is that Mr. Mayle was an Ohio distributor of Tic-Tac-Fruit terminals who did business with Mr. Kowell and OSG.

C. Kowell Revises His Own Skill Game Patent Application to Include a Preview Button

90. On June 21, 2006, Mr. Kowell applied for a patent on the preview button that was the subject matter of the new Tic-Tac-Fruit game developed by Mr. Pace as described above. Mr. Kowell stated in his 2009 deposition that "I put in a patent for a preview button on a skill game, which we developed together with

Mike Pace, but the idea came from a court case we had." (2009 Kowell Dep., at 114:22-25).

91. I have reviewed the patent which ultimately issued to Mr. Kowell, U.S. Patent No. 8,491,369 (the "Kowell 369 Patent") in 2013, based on a utility patent application filed on April 3, 2007. This patent claims priority to three different provisional patents filed in 2006, which I discuss in greater detail below.

92. Asked about the impetus for the preview idea during his September 2, 2021 deposition, Mr. Kowell testified as follows:

> Q. Do you recall that there was a hearing at which Mr. Reidthaler [sic] testified regarding how a game could be legal?
>
> A. Yes, yes.
>
> Q. And I believe it's your testimony that after hearing that testimony that you came up with the preview idea; is that correct?
>
> A. I came up with, yes, a preview idea to put on a machine based on his testimony that if you could see what was going to happen and you could get your money back it wouldn't be gambling if you didn't want to play.

(Kowell Dep. II, at 6:7-18).

93. My understanding is that the hearing in question was held October 19, 2005. (August 26, 2021 Deposition of Grant "Fuzzy" Kowell ("Kowell Dep. I"), at 89).

94. Mr. Kowell testified that within "a week or two, a couple weeks maybe" of the hearing, that he went to his patent attorney Zollinger. (Kowell Dep. II, at 7; Kowell Dep. I, at 93-94). He testified that the preview feature was discussed with his attorney at the initial meeting with his patent lawyer, and that he wanted a patent on the preview feature. (Kowell Dep. II, at 14-15).

95. When Mr. Kowell says he went to his patent lawyer, he testified that he "believed that [he] had invented something new", stating that "I had never seen it on any game or machine, so, yeah, I wouldn't have been in the patent office if that wasn't the case. I was there to put a patent on something." (Kowell Dep. II, at 8). Mr. Kowell believed the preview feature in question was valuable and testified that it wound up being valuable in Ohio. (*Id*., at 9). His stated motivation in filing for a patent was to protect the business POM and OSG were involved in Ohio. (*Id*., at 38).

96. Mr. Kowell testified: "The first thing I did was the preview feature, and then I came up with some of these other ideas, and [the patent attorney] kept adding it to this at later dates." (Kowell Dep. II, at 16).

97. On behalf of Mr. Kowell, his patent attorney Mr. Zollinger had as of April 5, 2006 filed provisional application No. 60/789,684 for a patent on a skill game. On June 14, 2006, he filed a second provisional application No. 60/813,786 for a patent on the same skill game. I have reviewed these first two provisional

applications, and, contrary to Mr. Kowell's testimony about when he first conceived of a preview feature and sought patent protection on it, they fail to mention any idea for a preview button on a skill game.

98. On June 21, 2006, Mr. Kowell filed provisional patent No. 60/815,352 (the "352 Provisional Application"). For the first time, Mr. Kowell mentioned as part of his efforts to obtain patent protection any idea for a preview button on a skill game. Specifically, the 352 Provisional Application included the following three brief passages about a preview feature – passages, which, as noted above, were absent from the earlier provisional patent applications filed on behalf of Mr. Kowell:

> The invention also provides a configuration wherein the player may preview the game to be played. In this configuration, the player may evaluate if he wishes to play the game by pressing a preview button that shows the player the first step of the game to be played as well as the prize the he will be playing for. (352 Provisional Application, at PA0000093).
>
> The game may also include an optional preview button that allows the player to learn the first step of the game that will be played next. The preview may also tell the player how much the prize will be if the player plays the game, makes the correct plays, and wins the game. For example, preview button may show the initial card deal, dice roll, or game set up as well as the prize that will be awarded if the player participates and wins. (*Id.* at PA0000094-95).
>
> The method and apparatus of the invention may thus be used to teach a player the correct manner to play a game. When the preview option is used, the player may determine the initial deal of the cards before the player commits to playing the game. The preview would show the player that the initial deal will be a pair of tens and that the payout

will be one dollar if the player makes the correct play. (*Id.* at PA0000096).

99. Therefore, it is apparent that Mr. Kowell thought of adding a preview feature into his skill game between June 14, 2006, and June 21, 2006, because all of these 3 short "preview"-related passages were wholly absent from the first two provisional patent applications filed on April 5, 2006 and June 14, 2006. Had Mr. Kowell met with a patent attorney right away about the preview feature with instructions to patent, as he testified, there is no good explanation for why these passages were not in the original provisional application filed April 5, 2006.

100. By June 21, 2006, as shown above, the following additional events had occurred:

- At least as of May 2, 2006, Michael Pace had rewritten Tic-Tac-Fruit source code, including TTF524 source code, to incorporate a "Next Puzzle" preview button and related source code for displaying the puzzle of the next game to be played to the player;

- Mr. Pace had created operational Tic-Tac-Fruit version 5.27 by compiling source code into the TTF527 executable files, which operate Tic-Tac-Fruit with a "Next Puzzle" preview button and source code for displaying the puzzle of the next game to be played to the player;

- Mr. Pace's patent counsel John Timar spent three and a half hours on June 5, 2006, meeting with POM representatives to discuss a new patent

application for "Tic-Tac-Fruit with Preview Screen" and commence preparation of a patent application drawing for "Tic-Tac-Fruit with Preview Screen"; and

- From June 6 through June 21, Pace's patent counsel expended an additional 11.7 hours drafting the patent application for "Tic-Tac-Fruit with Preview Screen."

101. Also, as noted above, Mr. Carrara states that Mr. Kowell asked Mr. Carrara to provide him with a sample game board containing a new version of Tic-Tac-Fruit having the preview feature based on the new source code created by Pace. Mr. Carrara shipped Mr. Kowell a game board to satisfy his request before any commercial release of the new version of Tic-Tac-Fruit incorporating the aforementioned preview feature. This likely occurred before June 21, 2006 because TTF527 was on game boards as early as June 9, 2006, and before June 23, 2006. (*See* June 23, 2006 Mayle Settlement Agreement, corroborating the fact that Tic-Tac-Fruit game terminals having versions 5.24 and 5.27 were already commercialized in Ohio by June 23, 2006). In any event, Mr. Pace indicated that he had advised Mr. Kowell and Mr. Gearhiser of his solution "right before [] preview was finished." (Pace Dep., at 141).

102. According to Mr. Kowell, it was Mr. Pace who "put the game in game form and on a machine. I could have never done that." (Kowell Dep. II, at 33). By his own admission, Mr. Kowell is not a technical person and he doesn't understand

what makes an electronic device work on the inside. (*Id.*) Mr. Kowell "didn't know anything about electronics or that type of thing, and Mike was one of the frontrunners in this type of equipment, making the boards and making it player-friendly." (Kowell Dep. I, at 33).

103. As reflected on the cover page of the 223 Patent, on June 30, 2006, counsel for Pace filed the utility application leading to the issuance of the 223 Patent, naming Mr. Pace as the inventor.

D. Opinions Relating to the Date of Invention of the 223 Patent Claims

104. I understand that there was a prior version of Tic-Tac-Fruit already in existence before May 2, 2006 (*see, e.g.*, Turner Report), but that it lacked any display of an actual game to be played before the player committed funds to play the game and pressed the PLAY button to play the game. This means that the prior art Tic-Tac-Fruit also lacked the testing of the game field prior to the initiation of game play. The Friedman Report at Paragraph 159 agrees with the foregoing analysis, stating that the independent claims of the 223 Patent and the prior art TTF game "carry out the same steps, the only difference is that the claims re-order the step of displaying the game to be played to be undertaken before the game is 'activated' rather than afterwards."

105. The contents of the Friedman Report at Paragraph 115, including the source code referenced therein and the other information noted above, provide a

reliable basis upon which to conclude that, at least as early as May 2, 2006, Michael Pace had created the Tic-Tac-Fruit source code for the testing of the game field prior to the initiation of game play, said testing otherwise conforming to the steps of the field construction and testing provided in Column 4 of the 223 Patent.

106. Based on the foregoing analysis, my opinion is that each of the TTF524 source code and TTF527 game terminal with the TTF527 files provide clear and convincing evidence that by at least as early as May 2, 2006, Mr. Pace conceived and reduced to practice a game processor configured to implement Tic-Tac-Fruit with the NEXT PUZZLE button and game preview feature, as well as the associated programming instructions in computer code, as described in the 223 Patent.

107. The TTF524 source code and the TTF527 firmware are dated before the date of the June 21, 2006 Kowell provisional. Kowell has no documentary or other evidence corroborating any claimed date of invention any earlier than June 21, 2006. Therefore, it is my opinion that Mr. Pace conceived and reduced to practice the electronic Tic-Tac-Fruit game and gaming terminal with the NEXT PUZZLE button and related game field generation, testing and preview features necessary to implement the construction, testing and actual display of an actual game to be played prior to the player's decision whether to initiate the play of the game before the date that Mr. Kowell first described any "preview" feature in a

writing associated with the Kowell 369 Patent. As shown below, based on my understanding of what constitutes "prior art," the Kowell 369 Patent is not prior art, and neither is the June 21, 2006 Kowell provisional patent.

108. I understand that the Friedman Report claims that the subject matter of the independent claims of the 223 Patent may not be technically satisfied if the Court's construction of "automatic display" were to exclude a machine process triggered by the selection of a manual input (the NEXT PUZZLE button). Assuming for the sake of argument that the Court agrees with the Friedman Report regarding the proper construction of "automatic display," my opinion remains unchanged regarding Mr. Pace being the true inventor of Tic-Tac-Fruit with the NEXT PUZZLE button and game preview feature, Mr. Pace having invented the subject matter of the 223 Patent before the June 21, 2006 Kowell provisional patent. There is nothing in the Kowell June 21, 2006 provisional patent or in the Kowell 369 Patent that teaches, suggests or otherwise describes an "automatic display" of an actual game to be played under the more restrictive construction proffered in the Friedman Report, except in response to the selection by the player of a game preview button.

109. Because nothing in the June 21, 2006 Kowell provisional patent application teaches, suggests or describes an automatic display of an actual game to be played without the player selecting a next game preview button, neither the

June 21, 2006 Kowell provisional or the Kowell 369 Patent disclose "automatic display" in any claims of the 223 Patent applying the Friedman Report's construction of the term. That would leave Mr. Pace's June 30, 2006 application as the first reduction to practice of the claims of the 223 Patent.

110. I am further of the opinion that the neither the June 21, 2006 Kowell provisional patent application nor the Kowell 369 Patent are evidence of what the Friedman Report describes in Paragraph 273 as "near simultaneous invention." First, there is no teaching in any of the Kowell documents of the Testing Element of the claims of the 223 Patent, so Kowell is not the inventor of any of the claims of the 223 Patent. Second, Kowell did not invent anything independent of Mr. Pace, and admitted in his 2009 testimony that "I put in a patent for a preview button on a skill game, which we developed together with Mike Pace[.]" (2009 Kowell Dep., at 114 (emphasis added)). My understanding is that the doctrine of near simultaneous invention can only be satisfied where the second invention occurs independently from the first invention. Finally, assuming for the sake of argument that Kowell's efforts to invent were independent, and that the Court adopts the Friedman Report's proffered construction of "automatic display" in the 223 Patent claims, Kowell did not conceive of the "automatic display" limitation of the claims. For these reasons, the doctrine of "near simultaneous invention" does

not apply to any activity undertaken by Kowell, including the contents of any Kowell patent or patent application.

E. Facts Relating to Riedthaler and Gearhiser

111. I understand that on October 19, 2005, a hearing took place before the Ohio Liquor Control Commission, to determine whether the then-current version of TTF was a legal skill-based game under Ohio law. *See* Case No. 1342-05, *In re: FOE Aerie 2171*, October 19, 2005 hearing.

112. I have reviewed the transcript of the October 2005 Hearing, including the testimony of a witness on gambling machines retained by the State of Ohio in the case, William Riedthaler. I have also reviewed the report Mr. Riedthaler prepared in July 2005 in connection with his inspection of certain TTF machines (the "Riedthaler Report").

113. When questioned by the State of Ohio's attorney, Mr. Riedthaler testified that TTF contained elements of chance, and thus was illegal under Ohio law, because the player did not know the amount of money to be won in the next game. Specifically, Mr. Riedthaler contrasted the game to a pinball machine, stating:

> So let's just say, what differentiates a little bit of this is that when we walk up to a pinball machine, **you know what you're going to win if you complete the task. In this case, it does tell you what the options are, the value of those, but in fact until you play the game and put your money in, what you get back is determined by the machine. It's chance.**

> **So let's just say you knew that the next one up was $.20, would be a $.20 winner. Would you walk up and put $1.00 in the machine if you know you could win $.20?** And the answer is no.

(October 2005 Hearing, at 86:2-15 (emphasis added)). The cross-examining attorney for the permit holder, Kurt Gearhiser, immediately objected to the response, noting that he would "go into that on cross-examination." (*Id.* at 86:16, 86:20-87:2).

114. Concluding his direct testimony, Mr. Riedthaler also compared TTF to a carnival dart game, where the prize to be won is hidden behind the balloon on which the player throws his dart: "**If you break the balloon, you don't know what you win until he turns over the tag**. And historically, in the state of Ohio, that's been found to be a gambling game." (*Id.* at 97:6-16 (emphasis added)).

115. Mr. Gearhiser cross-examined Mr. Riedthaler regarding this direct testimony and the Riedthaler Report. Mr. Gearhiser questioned Mr. Riedthaler regarding a "crane game", in which a player knows he is trying to retrieve a stuffed animal worth "$.10, $.20, $.30". (*Id.* at 110-111). Mr. Riedthaler contrasted TTF from such a game, explaining that whereas in the crane game, the player "make[s] that decision on what I'm picking up[,]" in TTF the machine decides what the value of the prize is. (*Id.* at 112). Mr. Riedthaler testified that the lack of a prize being announced ahead of time – not knowing "what I'm playing for" – put TTF "in the area of chance". In distinguishing the regulation governing the crane game

with those governing TTF, Mr. Gearhiser's questioning similarly focused on the "prize" being "announced ahead of time":

> A. **On this [TTF] machine, what happens is, [the machine] decides what the value of the prize that I'm playing for**. . . . Now me, as a crane, I make that decision on what I'm picking up, and I believe that's the question you asked me.
>
> Q. Does the statute say that the prize has to be announced ahead of time? Is there anything in the statute that says it has to be announced ahead of time?
>
> A. I believe that would be in the area of chance.
>
> Q. No, I'm asking you, does the statute indicate **the prize must be announced ahead of time, for a single task game or play**?
>
> A. In those exact words, no.
>
> Q. All right. Now, **if you have a competition, contest, or tournament, the prize needs to be announced ahead of time, does it, by statute**?
>
> A. Yes.
>
> Q. **So in a contest, competition, or tournament, <u>I need to know what I'm playing for</u>**, but by exclusion, **the statute doesn't say anything that it needs to tell me ahead of time what I'm playing for**. Never says those specific words, does it?
>
> A. Does not say those specific words.

(*Id.* at 112-113 (emphasis added)).

116. Mr. Riedthaler also discussed the skill-based Skee-ball arcade game, where a player can see how many tickets he will win based on a "schedule" "posted usually on the machine", noting that a Skee-ball player can "walk to the

counter, know what the prizes are, and then make a conscious decision should I play that game." (*Id.* at 133). Mr. Gearhiser again asked Mr. Riedthaler to concede that the statute relevant to TTF did not require "that you have to show the prize ahead of time". (*Id.*).

117. Mr. Riedthaler reiterated that knowing the "prize" prior to playing a game is key to whether the game is skill-based. (*Id.* at 123-124 (when questioned by Mr. Gearhiser about whether a hypothetical charity golf tournament where a player did not know the prize would be a game of chance, Mr. Riedthaler responding that unlike a golf tournament where that the golf player is "aware of the prize prior to starting the event", "[w]e've moved it toward chance[.]")).

118. Focusing on the TTF game at issue, Mr. Gearhiser continued his questioning as follows:

> Q. Once I've completed putting the money in, pressing the button, picking a location, I've done all the participation I can do?
>
> A. If you don't count your noninvolvement in the spinner and the flip game.
>
> Q. In this game, it awarded me $.20.
>
> A. Well, you have to do activity, but it produces – it's of no value, your activity performed, **because it's already selected the prize that you're receiving**.
>
> Q. Okay.

A. **But you're still performing an activity, but the activity you're performing has no effect on the outcome, because it's already been decided by the machine.**

Q. If this machine put the field that you were going to play prior to your putting the dollar in, would that change your opinion?

A. **If the player knew what he was playing for, it was not randomly selected, you know, after the start of the game –**

. . .

Q. . . . Let me just ask this: **That's the field[1], all right? So I know when I come up here, I've got the opportunity to win this way with three oranges?**

A. You have the capability of winning $.15 for your investment.

Q. Limes if I want to press this button?

A. Right.

Q. Oranges if I want to press that button. Oranges if I want to press that button. Or I don't know what was over here, but possibly oranges two ways, if I press that button. We already changed the screen.

A. **Yeah, in this case, what you have is, let's say you took the minimum and bet $.50. You know, knowing that you were going to give $.50, if you guess correctly, you would win $.15, or you would – I'm sorry, $.25 in that case. So you would knowingly know that you're playing the game with the intent of losing.**

Q. Right. Now, if the machine was operated that way?

A. Right.

[1] "[T]hat's the field" is apparently a reference to something being shown to the witness.

Q. We have it that way, is the machine in your opinion legal or illegal?

A. <u>If you knew the outcome, you knew the schedule, and that you knew that the process you were going into, then it would be a skill. Because you would be playing knowing that you're going to lose.</u> I don't know why you'd do that.

Q. I understand, but if you did, you would determine this machine to be a skill-based machine?

A. **<u>The same as, let's say, pinball, if you're playing a game that you know that you receive so many points, you receive such-and-such a reward, yes.</u>**

(*Id.* at pp. 144-146 (emphasis added)).

119. After taking a break in the hearing, Mr. Gearhiser asked Mr. Riedthaler about the following hypothetical:

Q. [W]e were just talking about that . . . situation was up there?

A. Right.

Q. That the machine would be okay?

A. The only thing I would add is that you'd have to be careful as we take – if a person not participating in the game could influence the outcome.

. . .

Q. Now, if I come up to the machine, and I haven't put my dollar in yet, but **this**[2] is now on the machine.

A. And **this** is the game that you'll be playing.

[2] "[T]his" is apparently a reference to something being shown to the witness.

Q. And **this** is the game that I'm going to be playing.

A. Right.

Q. **And I know ahead of time that all I would have done if I put $.50 into this machine, or if I'm going to play it, the only thing I was going to win was $.10?**

A. Right.

Q. **If that[3] was up there and everything else is the same on this machine?**

A. Right.

Q. I think you're giving it your blessing?

A. I wouldn't see a problem with it. Because you're basing – **your skill is completing the task as well as knowing what your prize is that you're going to receive.**

. . .

Q. . . . [A]ssuming everything was exactly the way it is, it's manufactured the same, it's in the same cabinet, it plays the same, it still has a hold, some kind of hold, but again a player could win each and every time, lose each and every time?

A. Um-hm.

Q. But we know the vendor would make money?

A. **He would know what the outcome or what he would win prior to starting the game.**

(*Id.* at 148-150 (emphasis added)).

[3] "[T]hat" is apparently a reference to something being shown to the witness.

F. Summary of Facts Regarding NudgeMaster

120. "NudgeMaster" refers to a variety of themed skill games under development at World Touch Gaming ("WTG"). (November 4, 2021 Declaration of Clinton Lowe, ("Lowe Dec."), ¶ 3).

121. "NudgeMaster" was exclusively intended for use with the Apex Gaming Terminal ("AGT"). (Lowe Dec., ¶ 3).

122. In a nudge game, the game board is displayed, for example, as three spinning reels, and the game waits for the player to perform a basic action to move ("nudge") one or more reels up or down to complete the game field. The game does not end until after the player "nudges" a reel up or down, producing a final combination of game symbols. (Lowe Dec., ¶ 5).

123. I have reviewed the Declaration of Clinton Lowe. Mr. Lowe was part of the NudgeMaster development team, which consisted of at least one or two lead game software engineers supported by other software engineers working on more peripheral aspects of the software. (Lowe Dec., ¶ 6). While I rely on Mr. Lowe's Declaration for certain of my opinions herein, I also rely on the other evidence noted herein that corroborates Mr. Lowe's statements.

124. I have also reviewed the AGT Software Version Descriptions document marked POM018322-18332 ("AGT Software Version Descriptions"), attached as Exhibit A to Mr. Lowe's Declaration. (Lowe Dec., ¶ 13). I note that the

Friedman Report also relies on this document for support in Paragraph 282. Furthermore, I note that the contents of POM018322-18332 appear consistent with the contents of the Ohio NudgeMaster version history document produced by Donald Fiechter in this case. (*See* "Ohio NudgeMaster Version History", attached as Exhibit 5 to August 30, 2021 Deposition of Donald Fiechter (the "Fiechter Dep.")).

125. The WTG development team was focused on developing enhancements to AGT-related games (*e.g.*, NudgeMaster) on an ongoing basis in 2005, 2006 and beyond. Some of the source code files reflect a date of initial creation in 2003 and 2004 as well. (Lowe Dec., ¶ 6).

126. Greg Freemyer and Clinton Lowe created a source code computer for inspection by the Defendants' counsel and expert (the "Source Code Computer") in September 2021. (Lowe Dec., ¶ 7; November 9, 2021 Declaration of Greg Freemyer ("Freemyer Dec."), ¶ 4). I understand that at one time the Source Code Computer included Visual Source Safe source code repositories comprising numerous versions up through 2010. This included the source code for 1.1.1.3 (the oldest), including versions 3.6.5.1 and 3.6.6.1 (NudgeMaster 5000), up through 4.8.5.41 (the newest). (Lowe Dec., ¶¶ 12, 15).

127. At the request of counsel for PA Coin, the source code on the computer was "rolled back" before Mr. Friedman and counsel for PA Coin

inspected the Source Code Computer, so that only source code created on or before June 30, 2006 would be accessible. (Freemyer Dec., ¶¶ 5-9). The last version of NudgeMaster in existence as of June 30, 2006 was described in version 4.2.2.9 (build date June 21, 2006). (AGT Software Version Descriptions, at POM 18331).

128. Therefore, when the Source Code Computer was made available for inspection to Mr. Friedman, he could only have reviewed, at most, source code files relating to NudgeMaster up through version 4.2.2.9, as those files were in existence internally at WTG as of June 30, 2006. (Freemyer Dec., ¶¶ 9, 11).

129. In my report, in discussing a software version's "build date," I am referring to the internal version build date of the source code by the WTG development team. (Lowe Dec., ¶ 9). The fact that a version was given a build date, such as is listed on a version control document (for example, AGT Software Version Descriptions), does not mean that the version was ever commercialized or otherwise released publicly. (*Id.*).

130. For my report, a source code "market" refers to the jurisdiction that the WTG development team was focused on during the development of a particular version of software. (Lowe Dec., ¶ 10).

131. That a version is listed with a specific market on AGT Software Version Descriptions does not mean that the version was ever commercialized or otherwise released publicly. (Lowe Dec., ¶ 10).

132. I understand that WTG protected the confidentiality of its AGT source code. (Lowe Dec., ¶ 11).

133. NudgeMaster 5000 is an early version of NudgeMaster. The earliest versions of NudgeMaster 5000-related source code include versions 3.6.5.1 and 3.6.6.1. (Lowe Dec., ¶ 12). I understand that Mr. Friedman reviewed the Source Code Computer containing the NudgeMaster 5000-related source code in September of 2021. (Lowe Dec., ¶ 12; Freemyer Dec., ¶¶ 4, 6).

134. The AGT Software Version Descriptions document, POM018322-18332, is an accurate document. (Lowe Dec., ¶ 13). The purpose of such a document is to maintain version history for software, to document the evolution of the software. (*Id.*). I note that the Friedman Report, Paragraph 282, also cites this document in support of its own conclusions about the development of AGT NudgeMaster-related source code between June and October 25, 2006.

135. AGT Software Version Descriptions shows that as of June 30, 2006, the software lacked source code relating to any preview of the next play of the game, *i.e.*, code for showing a potential player an actually-constructed game field for the next game to be played before the player had decided to play the game, had committed money to play the game and had pressed "Play". (POM018331-18332; Lowe Dec., ¶ 14).

136. Prior to the build of version 4.3.2.3, dated October 25, 2006, NudgeMaster software lacked any ability to show a next play of the game that would permit a user to see any part of the constructed game field for the next game to be played before deciding whether to play the game and committing money to the game and pressing "Play". (Lowe Dec., ¶ 17).

137. The October 25, 2006 NudgeMaster version 4.3.2.3 was the first to add a "Press Here to View Next Play" button which, if pressed, would yield an "entertaining-display result," which was something about the result of the next game showing its game board results as if properly nudged by the player. (Lowe Dec., ¶ 18). This is confirmed in the description of the change made to NudgeMaster version 4.3.2.3:

			license smartchips.
2006-10-25	4.3.2.3	NudgeMaster Ohio	NFA Submission for Ohio. Expands "Peek Next Game" functionality to allow preview of next game win amount, entertaining-display result, neither, or both. For Ohio, the option is locked in to show only the result. Also added legal/printer text option for Michigan.

(AGT Software Version Description, at POM018329).

138. In the September 2006 time frame, WTG began to have discussions with Nick Farley & Associates ("NFA") about a potential confidential review of NudgeMaster as it appeared in newly-developed AGT software. Mr. Lowe was tasked with providing Mr. Farley with the source code for Ohio to review for the purpose of having him potentially attest to its compliance with Ohio law. Such

compliance review typically precedes the commercial release of gaming software in a given jurisdiction. (Lowe Dec., ¶ 19).

139. I have reviewed a December 14, 2006 draft letter (the "Draft") purporting to be from NFA. The Draft is marked as Exhibit 3 to the Fiechter Deposition and Exhibit B to the Lowe Declaration. At page 2, the Draft states that it pertains to NudgeMaster version 4.2.2.24. This version had a build date of November 29, 2006. (AGT Software Version Descriptions, at POM018328).

140. The Draft does not purport to address any version of NudgeMaster that was built or commercialized as of June 30, 2006. In fact, the draft is erroneous, and at one point even refers to "Tic-Tac-Fruit" as the game software under consider, instead of NudgeMaster. This obvious error in the draft is apparently due to the fact that NFA reviewed game software of multiple vendors, including POM, and used template files to produce various drafts of its letters. (*See* Fiechter Dep., at 131).

141. The Draft also states:

> After selecting the desired purchase price, and prior to engaging in game play, the player may touch the "Press Here to View Next Play" icon on the video display to preview the next game to be presented. The "Press Here to View Next Play" will be displayed for approximately 5 seconds before returning to the previous game outcome screen. The player may evaluate the "Press Here to View Next Play" for each possible purchase price prior to committing funds for game play. The "Press Here to View Next Play" feature permits the player an opportunity to decide which game to play next based upon the price to play. Alternatively, the player may exit the selected

> game, choose another game and purchase price, or cash out any accumulated "Credits", which may be redeemed for cash.

(Draft, at 2).

142. This part of the Draft also appears to be in error. (Lowe Dec., ¶¶ 21-23).

143. Although Mr. Lowe sent Mr. Farley certain NudgeMaster source code, he does not recall Mr. Farley requesting, nor does he recall sending Mr. Farley source code corresponding to version 4.2.2.24. Mr. Lowe also does not recall WTG ever seeking a compliance letter for that version. (Lowe Dec., ¶ 22).

144. Version 4.2.2.24 did not have a "Press Here to View Next Play" button which, if pressed, would yield a display showing any graphical features of an actual game to be played before the player committed funds to play the game. (Lowe Dec., ¶ 23).

145. The Draft itself states that it is incomplete and prepared before Mr. Farley reviewed any source code or manuals of NudgeMaster. On page 10, for example, the following statements appear: "I WILL NEED SOME TIME TO REVIEW SOURCE CODE – I NEED TO CONTACT WORLD TOUCH TO DISCUSS THE RELATIONSHIP WITH THEIR OTHER PRODUCTS THAT DOESN'T QUITE ADD UP TO ME – NF" and "NFA [Nick Farley & Associates] WS [sic, was] NOT SUPPLIED WITH AN OPERATOR'S / TECHNICIAN'S MANUAL –PLEASE SEND ONE TO US ASAP. – NF".

146. I have reviewed a January 30, 2007 letter from NFA (the "2007 NFA Letter"), which states that it pertains to Mr. Farley's "Report on the review and analysis of the NudgeMaster game, version 4.3.2.10." The 2007 NFA Letter is marked as Exhibit 4 to the Fiechter Deposition and Exhibit C to the Lowe Declaration.

147. The build date for version 4.3.2.10 is January 22, 2007. (AGT Software Version Descriptions, at POM018327).

148. The 2007 NFA Letter states on page 2 in reference to version 4.3.2.10:

> After selecting the desired purchase price, and prior to engaging in game play, the player may touch the "Press Here to View Next Play" icon on the video display to preview the next game to be presented. The "Press Here to View Next Play" will be displayed for approximately 5 seconds before returning to the previous game outcome screen. The player may evaluate the "Press Here to View Next Play" for each possible purchase price prior to committing funds for game play. The "Press Here to View Next Play" feature permits the player an opportunity to decide which game to play next based upon the price to play. Alternatively, the player may exit the selected game, choose another game and purchase price, or cash out any accumulated "Credits", which may be redeemed for cash.

149. The earliest build date for NudgeMaster-related source code having the foregoing "Press Here to View Next Play" with a preview of a graphical element of the next game field is October 25, 2006. (Lowe Dec., ¶ 27; AGT Software Version Descriptions, at POM018329).

150. In the 2007 NFA Letter, the reference to the "Press Here to View Next Play" with a preview of the next game feature for version 4.3.2.10 does not refer to a feature in that version (or any version) of NudgeMaster automatically displaying the constructed game field of the next game to be played as it would appear before the player exercised his or her nudge in the game. (September 17, 2021 Rule 30(b)(6) Deposition of Savvy Dog through Greg Cline ("Savvy Dog Dep. II"), at 286:1-287:8, 287:19-288:11).

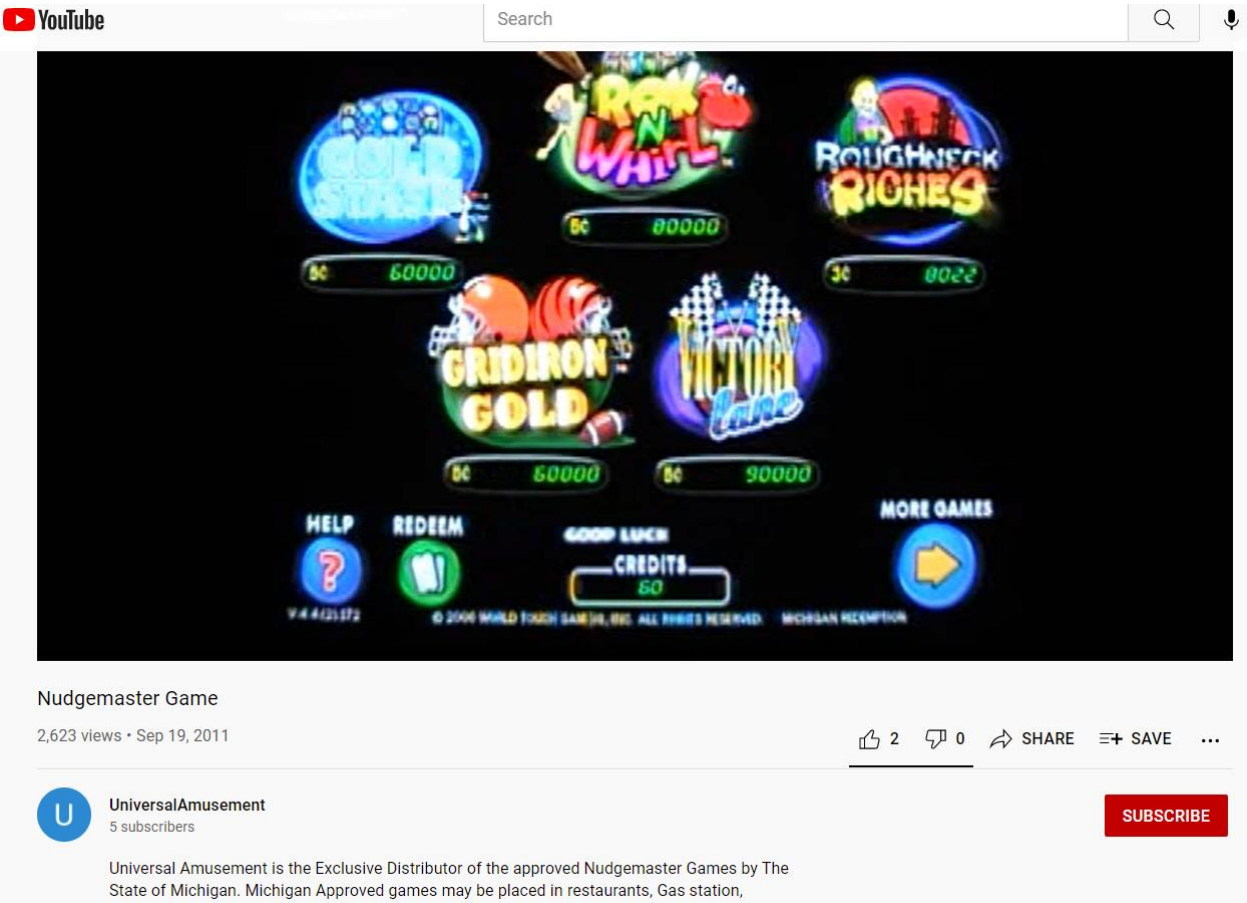
151. Pressing the "Press Here to View Next Play" button in an operational version 4.3.2.10 on a terminal would result in the graphic display of the result of the next game to be played, as if the player had exercised the nudge feature to complete the game field. The purpose of the feature was to provide an entertaining way of showing the player the result of the next game to be played (referred to as an "entertaining-display result") before the player committed funds as part of a decision to play the next game in question. (Lowe Dec., ¶ 28; AGT Software Version Descriptions, at POM018329).

152. Therefore, based on this evidence, WTG never developed a version of NudgeMaster-related software that, prior to the player committing funds to play the actual game, would automatically preview the constructed game field of the next game to be played, wherein the entire game field of an actual game to be

played would appear to the player before the player exercised his or her nudge to complete the game.

153. The 2007 NFA Letter also contains an appendix of computer file names. Fiechter stated that he "think[s] this is something that Farley's software that analyzes all the file sets of a particular version of software, I think this is some format that they kick out." (Fiechter Dep., at 138:22-25). Mr. Fiechter also testified that none of these file names "references specifically indicated that a preview feature showing the whole game was being added." (*Id*., at 138:12-18).

154. I have also reviewed an online video that was apparently uploaded to YouTube in September 2011, at https://www.youtube.com/watch?v=XCCfMtFafgw&feature=youtu.be purportedly by "Universal Amusement" (the "2011 Video"), as follows:



155. I have not seen evidence that anyone is familiar with who created the 2011 Video, or the circumstances associated with the creation of the video. I am not aware of any reason to believe that the video existed on or before June 30, 2006, or depicts any video game terminal in existence as of June 30, 2006. (Lowe Dec., ¶ 30).

156. The video in question appears to depict the operation of an AGT terminal and related game themes designed for use in the State of Michigan. (Lowe Dec., ¶ 31).

157. At the very bottom of the lower part of the introductory screen for the 2011 Video shows in somewhat blurry text (in red below) the version number as "v: 4 4 (2) 172" followed by "© 2004 WORLD TOUCH GAMING, INC. ALL RIGHTS RESERVED" followed by "MICHIGAN REDEMPTION".

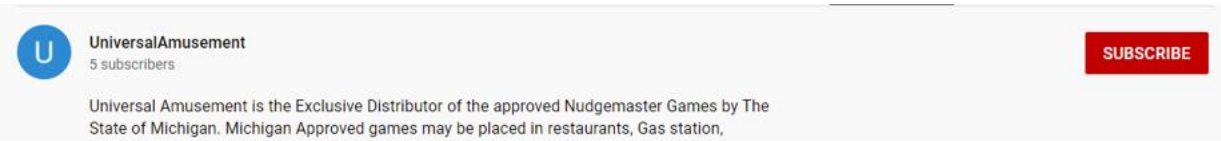
(*See* Lowe Dec., ¶ 32).

158. "v: 4 4 (2) 172" appears to be a reference to AGT version 4.4.2.172. The version "4.4" series was not built until 2007. (Lowe Dec., ¶ 33). Thus, it was not in existence as of June 30, 2006. Mr. Fiechter also stated on this point:

> Q. And version 4.4 was not in existence in 2004, was it?
>
> A. I would assume not. I don't know. I don't think -- again, with the way they do these numbers, I don't know, but I highly doubt it.

(Fiechter Dep., at 140:5-9 (emphasis added)).

159. Below the video on the YouTube web page, it states "Universal Amusement is the Exclusive Distributor of the approved NudgeMaster Games by The State of Michigan."



160. Various other screens shown in the 2011 video state "Michigan Redemption" in the lower right hand corner of the video screen, including the screen reproduced below from the 0:11 mark where the player selects to play the game theme "Victory Lane" (with Michigan Redemption" circled in red):

161. "Michigan Redemption" indicates that NudgeMaster operating on the AGT terminal in question was designed for use in Michigan. (Lowe Dec., ¶ 37).

162. The earliest WTG software build with the intent for potential use in Michigan was version 4.2.2.18, with a build date of September 25, 2006. (Lowe Dec., ¶ 38). This is confirmed by AGT Software Version Descriptions, which refers to Michigan as a "New Market Type" as of September of 2006:

2006-09-25	4.2.2.18 Patch	NudgeMaster Michigan	Patch from 4.2.2.14. This build should not exist - its only purpose is to hardcode the defaults for NVRAM clears. New Market Type, Michigan, has configuration almost identical to Ohio. Exceptions: 1) Hand Counts are enabled due to win and deposit purses routing to POINTS. 2) Points Hand Value is $3.75.

(POM018329). Version 4.2.2.18 is a patch from 4.2.2.14, which was designed with Ohio in mind. (Lowe Dec., ¶ 39).

163. Neither 4.2.2.18 nor 4.2.2.14 contained the functionality of the "Press Here to View Next Play" button addressed in version 4.3.2.10 described above. (Lowe Dec., ¶ 40).

164. The earliest version of any software built with Michigan in mind and having source code comparable to the source code relating to the "Press Here to View Next Play" button (described above in regards to version 4.3.2.10) that would result in a graphic display of any aspect of the next game to be played (including result) was version 4.3.2.13, having a build date of February 21, 2007. (Lowe Dec., ¶ 41). AGT Software Version Descriptions confirms this at POM018327, stating:

2007-02-21	4.3.2.13	NudgeMaster Michigan	Michigan needed the Peek-Next feature with the ability to view Game Results instead of amounts.

165. The 2011 Video shows at the 0:19 mark that once the player selects "Victory Lane", a game screen for Victory Lane appears, revealing a number of

graphic buttons, including a button entitled "Press Here to View Next Play," illustrated as follows:

166. The first reference to "Victory Lane" in any source code occurred on April 10, 2007 (in version 4.3.2.20). (Lowe Dec., ¶ 42).

167. No source code used "Michigan Redemption" as of June 30, 2006. "Michigan Redemption" was added into the source code on August 12, 2008 (version 4.4.2.85). (Lowe Dec., ¶ 43).

168. The source code for version 4.4.2.85 includes references to "Victory Lane." (Lowe Dec., ¶ 44).

169. Thus, Victory Lane and Michigan Redemption were not introduced together in any source code until 2008.

G. The Friedman Report Erroneously Concluded that NudgeMaster is Prior Art

170. The Friedman Report at Paragraph 222 contends that NudgeMaster was a game that was publicly available in the prior art. It asserts, without citation to any clear and convincing evidence, that NudgeMaster was "disclosed, used and/or commercialized, or described in publications that describe the game, before the alleged date of invention [of the '223 Patent] (May 2, 2006) and more than one year before the application filing date (June 30, 2006) of the '223 patent including similar versions developed by or with Skill Tech Gaming LLC and/or World Touch Gaming Inc. that utilize different branding or graphics ('NudgeMaster')."

171. I disagree with the Friedman Report on these points. The Friedman Report fails to provide any objective evidence in support of these assertions. Specifically, there is no objective evidence recited in the Friedman Report that any version of AGT software having a NudgeMaster game theme and the novel Testing and Automatic Display Elements of the 223 Patent even existed as of the May 2, 2006 date of invention or even as of the filing of Mr. Pace's application on June 30, 2006. Indeed, as noted above, there is no evidence that WTG ever developed a version of NudgeMaster-related software that, prior to the player committing funds

to play the actual game, would automatically preview the constructed game field of the next game to be played, wherein the entire game field of an actual game to be played would appear to the player before the player exercised his or her nudge to complete the game.

172. Because no such version of NudgeMaster existed as of May 2, 2006 or June 30, 2006, there necessarily could not have been any public use, sale or public disclosure in a printed publication or otherwise of such non-existent version of NudgeMaster as of these dates. For the same reasons, plainly no such activity took place prior to the even earlier Bar Date (June 30, 2005).

173. The December 14, 2006 dated Farley draft letter is not a reliable indicator of any sale, public use, or feature-set within NudgeMaster as of June 30, 2006 (or earlier). The draft is dated long after June 30, 2006, and before NFA had reviewed any source code or manuals. Moreover, the version that the draft purports to address (v.4.2.2.24) is mischaracterized, was not provided to NFA for review, and was not in existence as of June 30, 2006.

174. The January 2007 NFA letter is not a reliable indicator of any sale, public use or feature-set within NudgeMaster as of June 30, 2006 (or earlier). The letter related to version 4.3.2.10, which was not built until January 22, 2007.

175. The "Press Here to View Next Play" button with ability to preview more than the mere textual description of a next play win amount was not

introduced in any version of NudgeMaster until version 4.3.2.3 (built on October 25, 2006). Further, there is no evidence that version 4.3.2.3 or 4.3.2.10 was ever commercialized.

176. Lacking any credible, objective evidence from the prior art, the Friedman Report at Paragraph 223 relies upon "a YouTube video posted by user 'UniversalAmusement,' showing a game displaying a 2004 copyright date, which is available at https://www.youtube.com/watch?v=XCCfMtFafgw&feature=youtu.be". This is the 2011 Video discussed above.

177. The 2011 Video is not a reliable indicator of any sale, public use or feature-set within NudgeMaster as of June 30, 2006 (or earlier) because the video's origins and circumstances are unknown. It is therefore not clear when the video was taken, whether it was taken by a WTG employee, whether the AGT depicted was in a public place when the video was made, and if so, whether it was in public at or before June 30, 2006.

178. The 2011 Video is not a reliable indicator of any sale, public use or feature-set for any gaming terminal or gaming software as of June 30, 2006 (or earlier) because it did not become publicly known until 2011 when it was uploaded to YouTube.

179. The 2011 Video is not a reliable indicator of any sale, public use or feature-set as of June 30, 2006 (or earlier) because the video shows that it pertains to version 4.4.2.172, which was not built until after 2007.

180. The 2011 Video is not a reliable indicator of any sale, public use or feature-set as of June 30, 2006 (or earlier) because the video shows "Victory Lane" and "Michigan Redemption," which were not introduced in any version of any WTG source code together until August 12, 2008.

181. The 2011 Video is furthermore not a reliable indicator of any relevant feature-set because there is no indication of what happens if the player were to press a button such as the "Press Here to View Next Play" button. (Fiechter Dep., at 139:13-18).

182. The 2011 Video which shows the "Press Here to View Next Play" button on the Victory Lane game screen does not show a copyright notice date of 2004 on that particular screen. Only introductory screens of the AGT platform use that date, and as such, the date is not indicative of the date any particular game theme or feature-set was developed internally, publicized or commercialized by WTG.

183. Paragraph 232 of the Friedman Report focuses on features "that display to a player aspects of a game outcome before play." (Emphasis added). This Paragraph highlights another weakness of the evidence upon which Friedman

relies: "aspects of game outcome" is not the Court's construction of "actual game to be played" as used in any of the claims of the 223 Patent, and the Friedman Report does not show otherwise.

184. Paragraph 282 of the Friedman Report acknowledges that NudgeMaster lacked development of any "Press Here" button in the prior art that would show any game symbols of the next game, based on a review of the AGT Software Version Descriptions document marked POM018322-18332. According to Paragraph 282, "These records document the implementation of a NudgeMaster Ohio product that previews an actual game to be played at nearly the same time as Mr. Pace's purported conception." (Emphasis added). By "nearly the same time," the Friedman Report is referring to the build date of October 25, 2006 shown in POM018329, almost four months after Mr. Pace applied for the 223 Patent.

185. The Friedman Report reference to "implementation" of a specific NudgeMaster product in Paragraph 282 is not adequately supported. As discussed above, the mere fact that an AGT version is listed in connection with a specific market on AGT Software Version Descriptions does not mean that the version was ever commercialized or otherwise released publicly. There is no documentation of any actual "implementation" of any "product" in any market.

H. Fiechter's Testimony is Not Corroborated by Objective, Timely Evidence

186. Paragraph 256 of the Friedman Report states that "At deposition, Mr. Fiechter, one of the founders of World Touch Gaming, reviewed the video depicting a NudgeMaster game referred to as the UniversalAmusement Video."

187. As shown above, the 2011 Video is flawed and is not evidence of the existence, sale, or public use of any version of NudgeMaster in the prior art. Without the unreliable 2011 video, the Friedman Report is left to rely solely on the uncorroborated deposition testimony of Mr. Fiechter, ignoring all evidence to the contrary.

188. The Fiechter testimony to the effect that a prior art version of NudgeMaster existed which practiced the automatic display of an actual game to be played prior to the initiation of the game is not reliable or credible in this case for at least the following reasons:

- It is testimony being offered 15+ years after-the-fact without any corroboration by any other evidence from the prior art time frame.

- It is based, at least in part, on the unreliable 2011 Video, of which Fiechter testified he is not the creator, stating that he has "no clue" who created it. (Fiechter Dep., at 119:22-120:2).

- It is based, at least in part, on the contents of the unreliable 2007 NFA letter describing a version of NudgeMaster source code that was not in existence as of June 30, 2006. (*See* Friedman Report, ¶ 259).

- Mr. Fiechter is a former employee of POM, an affiliate of Michael Pace and the Plaintiffs, and admits that he continues to be "super upset" at Pace for terminating him. (Fiechter Dep., at 141:18-142:6).

- It is contradicted by the Declaration of Clinton Lowe and the objective information upon which Mr. Lowe's testimony is based, including the AGT Software Version Descriptions document attached as Exhibit A to the Lowe Declaration. Regarding this type of documentation, Mr. Fiechter merely testified that "I don't know all the nuances of following version control and all that[.]" (Fiechter Dep., at 136:25-137:2).

- It is contradicted by the chronology of source code development set forth in Paragraph 282 of the Friedman Report itself (stating "Also at nearly the same time, according to release notes documentation, the developers of the NudgeMaster game had already created a NudgeMaster version for Ohio, version 4.1.2.9 dated April 10, 2006. POM018331. By June 5, 2006, the developers had documented implementation of 'legalizing changes for Ohio' including 'show next play's win amount' in version 4.2.2.2 of NudgeMaster Ohio. *Id*. By October 25, 2006, the developers had documented 'expand[ing] 'Peek Next Game'

functionality to allow preview of next game win amount, entertaining-display result, neither, or both' in version 4.3.2.3 of NudgeMaster Ohio. POM018329. A POSITA would understand that the phrase 'entertaining display' relates to the game field (including symbols) shown to the player, as opposed to the win amount.").

- Mr. Fiechter did not possess or review any source code, contracts or other documentation from the prior art time frame before testifying.

I. After June 30, 2006, NudgeMaster Lacked Key Elements of the 223 Patent

189. No evidence suggests, much less proves by clear and convincing evidence, that NudgeMaster practiced the element of testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, which is a required element in every independent claim of the 223 Patent. The Friedman Report does not contend that the Testing Limitation is in any way present in any version of NudgeMaster.

190. From the evidence I have reviewed, as noted above, there is no prior art version of NudgeMaster which practiced the element of automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play – a required element in every independent claim of the 223 Patent. This conclusion is supported by:

a. Evidence that the "Press Here to View Next Play" button and functionality relating to showing anything more than the textual result of the next game to be played was not introduced in the build of any version of NudgeMaster source code until v.4.3.2.3 with a build date of October 25, 2006.

b. The functionality of v.4.3.2.3 would not have been capable of automatically displaying an actual game to be played, construed by the Court as "the constructed game field of the game to be played", on the touch screen game display to a player prior to initiating activation of game play.

c. Instead, as discussed above, if the button were depressed, it would show a graphical depiction of the result of the next game, as if the player had exercised his or her nudge (had already played the game). Such a nudge would alter the constructed game field of the game to be played. As a result, the opinion that Friedman Report states in Paragraph 260 that "NudgeMaster disclosed a preview button that, when pressed, would show the player the constructed field of the next game to be played" is not only undocumented, undated and without reference to any specific version of NudgeMaster, but furthermore is incorrect as to every version of NudgeMaster, including those versions created after June 30, 2006.

d. The Friedman Report asserts, without any persuasive support, that "[s]howing the next game's 'entertaining display' is equivalent to showing 'an

actual game to be played' as construed." (Friedman Report, ¶ 282 (emphasis added)). However, the passage which the Friedman Report quotes is inaccurate because it is incomplete. Here is what the document in question states:

			license smartchips.
2006-10-25	4.3.2.3	NudgeMaster Ohio	NFA Submission for Ohio. Expands "Peek Next Game" functionality to allow preview of next game win amount, entertaining-display result, neither, or both. For Ohio, the option is locked in to show only the result. Also added legal/printer text option for Michigan.

(AGT Software Version Descriptions, at POM018329). The Friedman Report never actually shows that an "entertaining-display result," which may be the equivalent of a graphical display of the next game's win amount, is the equivalent of an "actual game to be played," as construed by the Court, and subsections b. and c. above in this paragraph refute any such assertion.

e. Implicit in the Friedman Report is the conclusion that a "Next Play" or other manually-activated button, or the like, is not sufficient to meet the required element of an "automatic" display of an actual game to be played. Assuming for the sake of argument that the Friedman Report is correct in this regard, that would be another reason why NudgeMaster version 4.3.2.3 and its progeny, if it was ever operational in public, would not have practiced the Automatic Display Element of the 223 Patent's claims.

J. Summary of NudgeMaster-Related Opinions

191. For the foregoing reasons expressed in Section VI(B), I disagree with the assertion that NudgeMaster, or any version of it, constitutes prior art. I further

disagree with the opinion expressed in the Friedman Report at Paragraph 261, that NudgeMaster, or any version of it, alone or in combination with any other prior art reference, renders any claim of the 223 Patent obvious.

192. For the foregoing reasons expressed in Section VI(B), I disagree with the conclusion of the Friedman Report that NudgeMaster represents a "near simultaneous invention" of any of the claims of the 223 Patent. To the contrary, the evidence shows that WTG had an active software development team working for years on game source code and never created any software capable of practicing the Testing and Automatic Display Elements of the claims of the 223 Patent.

VII. THE FRIEDMAN REPORT FAILS TO SHOW BY CLEAR AND CONVINCING EVIDENCE THAT THERE IS IMPROPER INVENTORSHIP.

A. The Pre-AIA Law on Conception and Co-Inventorship.

193. My understanding of the pre-AIA law on conception is set forth above in Section III.

194. I further understand that for an individual to be a co-inventor of a patent, that individual must: (1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely

explain to the real inventors well-known concepts and/or the current state of the art.

195. I understand that to prove co-inventorship, a co-inventor's contribution to the conception must be shown by clear and convincing evidence. Furthermore, an inventor's testimony respecting the facts surrounding a claim of derivation or priority of invention cannot, standing alone, rise to the level of clear and convincing proof: the alleged co-inventor must supply evidence to corroborate his testimony.

196. I understand that if the inventor listed on an issued patent is incorrect, the patent is invalid only if the error in inventorship cannot be corrected due to the deceptive intent of the patent owner or its privies. Put another way, if the incorrect listing was innocently done, the patent is not rendered invalid.

B. Michael Pace is the Sole Inventor of the 223 Patent

197. The Friedman Report opines that Michael Pace did not invent the feature of "automatically display[ing] an actual game to be played on the touch screen game display to a player prior to initiating activation of game play". (Friedman Report, ¶¶ 284-293). As detailed in this report, I disagree with the Friedman Report's conclusion of improper inventorship. I further disagree with the Friedman Report's analysis of the allegedly corroborating evidence of inventorship. Based on my review of the alleged facts supporting a claim of

improper inventorship, I believe there is no evidence – let alone clear and convincing evidence – of improper inventorship. In my opinion, the evidence reflects that Michael Pace is the sole inventor of the 223 Patent.

198. In Section VI of this Report, I have explained the facts and timeline relating to Mr. Pace's invention of the subject matter of the 223 Patent, including his development of the gaming technology described in the 223 Patent and incorporated in the TTF524 and TTF527 software versions. I incorporate those provisions into this discussion by reference. By comparison, Mr. Gearhiser is an attorney focused on whether existing games are legal or not in Ohio. He admits that he is not an electronic game designer or programmer. He stated:

> Q. Okay. And so in your role as a lawyer in the gaming and liquor business, are you involved in developing how games operate for your clients?
>
> A. I have nothing to do with computer programming, if that's what you're asking. My kids would tell you I'm computer illiterate. I think I'm semi-illiterate. That being said, if we're discussing the aspect of games and their operation in Ohio to meet state statutes or regulations, the answer would be yes.

(July 28, 2021 Deposition of Kurt Gearhiser ("Gearhiser Dep."), at 9 (emphasis added)). Indeed, Mr. Gearhiser gave his legal opinions based on the technology conceived of, developed and described by others.

199. Further, while Mr. Riedthaler testified on behalf of the State of Ohio in part evaluating games for compliance with Ohio gambling laws (*see* October

2005 Hearing, at 50-54), he is not a game designer, nor does he have the background necessary to develop such games with any degree of confidence that they would work for their intended purposes. (*Id.*).

200. The Friedman Report overstates the transcript of the October 2005 hearing, omitting key portions of the transcript that put Mr. Gearhiser's questions and Mr. Riedthaler's testimony in context. (*See* Section VI(E), *supra*, for a full discussion of the hearing). I do not believe the October 2005 Hearing rises to the level of corroborating evidence that either Mr. Riedthaler or Mr. Gearhiser invented or co-invented the 223 Patent claims. I also note that there is no evidence that any feature of testing was discussed or understood during the October 2005 Hearing.

201. Moreover, Mr. Gearhiser has not testified in this case that he considered himself the inventor of the subject matter of the 223 Patent. In fact, he refused to take credit even for any high-level "thoughts" relating to any solution for the legal problem of random prize selection and awards that was identified by the State, as evidenced by the testimony and report of Mr. Riedthaler. (Gearhiser Dep., at 67-68, stating "I can't say it was my idea.").

202. I am of the opinion that a POSITA reading the transcript impartially would not conclude that Mr. Gearhiser disclosed the "Automatic Display Element"

during his questioning of Mr. Riedthaler, as posited by the Friedman Report. (Friedman Report, ¶ 289).

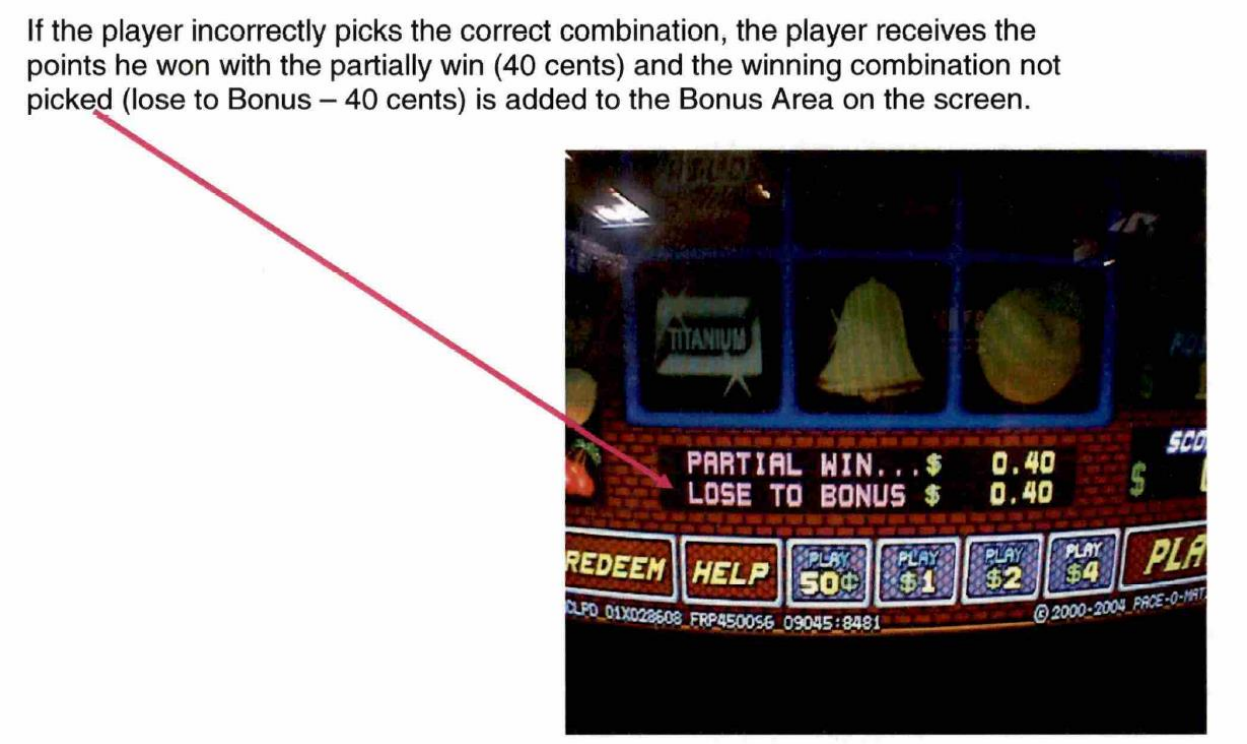
203. The Friedman Report's attempt to rely upon the October 2005 Hearing is undercut by its reliance on terms (*e.g.*, "field," "this," "that") that are undefined in the transcript. What Riedthaler or Gearhiser meant in 2005 – 16 years ago – based on their use of such vague and undefined terms so long ago is a matter of sheer speculation.

204. Often, in the course of the October 2005 transcript, the ability to understand the nature of each question and answer with even a reasonable level of confidence is obscured by the inability to see whatever it was that Gearhiser and Riedthaler were seeing during the questions and answers. Therefore, the value of the transcript is often undercut by the lack of any screenshot or other supporting exhibits that are needed to clarify the record of the transcript.

205. For example, various discussions between them as recorded in the October 2005 Hearing also involve things being observed visibly on a screen that one or both of them were apparently looking at while conversing. Without a videotape of the proceedings, and clear copies of whatever it was that one or both of them were looking at, it is merely an exercise in speculation to now read that transcript with the benefit of hindsight reasoning (with the claims of the 223 Patent in mind).

206. As a threshold matter, it is not possible that Mr. Riedthaler and Mr. Gearhiser were looking at a screen displaying the actual game to be played prior to the player committing to play, as that feature was not programmed into TTF as of October 2005.

207. For a "field" or a "game," it is plausible that Mr. Riedthaler and Mr. Gearhiser could have been looking at a specific part of a given screen showing results for a given play amount, such as the following (contained in the Riedthaler Report, at 5):



208. Mr. Riedthaler and Mr. Gearhiser also could have been looking at a different screen that has nothing to do with the automatic display feature (*e.g.*

showing the game as if it had already been played, with a placement of the wild symbol, which would never occur in an actual game "to be played"):

(Riedthaler Report, at 5). In my opinion, such a screen does not show "an actual game to be played", because it shows the placement of the wild symbol – the game as it had already been played.

209. I am not of the opinion that one of these two foregoing screenshots from the Riedthaler Report are representative of what Messrs. Riedthaler and Gearhiser were discussing in the 2005 Hearing Transcript. At this time, 16 years after the fact, no one knows what they were looking at. My point is that without seeing the specific screen(s) of the gaming terminal as displayed during the hearing

contemporaneously with the testimony, it is simply unclear what was meant by imprecise terms such as "this", "that" or "field". As such, the October 2005 Hearing is not clear and convincing evidence of Mr. Gearhiser and/or Mr. Riedthaler's conception of a feature including the automatic display of an actual game to be played.

210. What is apparent from the October 2005 Hearing transcript, taken as a whole, is that it was not focused on the design of any new gaming technology. Neither Mr. Gearhiser nor Mr. Riedthaler provide a complete description of every feature claimed in any of the claims of the 223 Patent.

211. Further, in addition to the fact that the elements of a working game design (examples include game terminal, controls, input/outputs, configuration of a game processor, programming instructions) are entirely missing from the transcript's discussion, the transcript in particular does not disclose the combination of the Testing Element with the Automatic Display Element in a way that would give a POSITA reading the transcript any confidence that any idea being presented was complete, and capable of working for its intended purpose.

212. Rather, a POSITA reading the transcript hearing would merely conclude, as I have, that Mr. Riedthaler had concerns that the then-current TTF game did not show a player the amount he would win prior to play of the game,

along with Mr. Gearhiser's suggestion that somehow displaying the next game prize amount prior to play of the game would alleviate this concern.

213. As detailed above in Section VI(E), Mr. Riedthaler's and Mr. Gearhiser's discussion concerned a hypothetical game in which the **prize** on the next game to be played would be displayed – not the "actual game to be played" as the term has been construed by the Court, identifying comparable games, includes:

- Mr. Riedthaler's testimony contrasting TTF to a pinball game in which "**you know what you're going to win if you complete the task"**. (October 2005 Hearing, at 86 (emphasis added)).

- Mr. Riedthaler's testimony contrasting TTF to a crane game: whereas in the crane game the player decides which prize to pick, in TTF the machine decides the value of the prize. (*Id.* at 110-112).

- Mr. Gearhiser's repeated questions regarding whether the Ohio statute requires "**the prize . . . to be announced ahead of time**[,]" such that "**I need to know what I'm playing for**[.]" (*Id.* at 112-113 (emphasis added)).

- Mr. Riedthaler's discussion of the skill-based Skee-ball arcade game, focusing on the fact that a player can see a "schedule" "posted usually on the machine" disclosing the tickets he will win and noting that a Skee-ball player can "know what the prizes are, and then make a conscious decision" whether or not to play that game." (*Id.* at 133).

214. Further, as detailed above, Mr. Riedthaler contrasted such a hypothetical TTF game with the situation where a prize would not be known ahead of time, including:

- Mr. Riedthaler's testimony comparing TTF to a dart game in which the player does not know the **prize** amount until after a balloon in successfully popped by the player. (*Id.* at 97).

- Mr. Riedthaler's discussion of a hypothetical charity golf tournament where a player did not know the prize prior to starting the event, which would "move[] [the game] toward chance[.]" (*Id.* at 123-124).

215. My conclusion regarding the scope and content of the October 2005 hearing transcript, taken as a whole, is consistent with the associated Riedthaler Report which preceded the hearing. Here again, the Riedthaler Report's key concern was the random award of a prize, which in Mr. Riedthaler's opinion resulted in TTF being a game of chance. Notably, the Riedthaler Report distinguished between an outcome ("which includes the awarding / selection of a prize") being determined by chance, and the "take / game / play" being determined by chance. The October 2005 Hearing transcript must be considered in view of the lens of this Riedthaler Report:

> Random House Webster's College Dictionary (1991) defines **outcome** as the "**final product or end result**."

> A **skill-based game requires the <u>outcome</u> as distinguished from the <u>task / game / play</u> not also be determined by chance which includes the awarding / selection of a prize**. **The game in question has several chance / gambling issues:**
>
> - Successfully completing the task makes you eligible to win a prize; **but the prize is selected randomly by the machine's software[4] based on the percentage of wins allowed by the tables.**
>
> - The game board / **prize** awarded is established by chance after the player has placed his wager not knowing what the game board or **prize** will appear.
>
> . . .
>
> The skill is useful but does not overcome the winner's success being controlled by the machines [sic] selection of the game board, **the prize value** and percentage of profit guaranteed to the owner / operation.

(Riedthaler Report, at 10 (emphasis added)).

216. My opinion is also consistent with the pending regulatory amendment identified in the Friedman Report which would require a player to be "aware of what prize or reward will occur prior to the start of play." (Friedman Report, ¶ 238 (quoting Dennis Papp SB 220 Analysis at 1, PA 0000174)).

217. The Friedman Report cites to snippets of the October 2005 hearing transcript that do not reflect conception of the automatic display of an "actual game

[4] Footnote omitted.

to be played". (Friedman Report, ¶¶ 288-289). As explained herein, the transcript when viewed in context is not evidence that Mr. Gearhiser or Mr. Riedthaler disclosed or conceived of the Automatic Display Element of the claims of the 223 Patent in October 2005.

218. The October 2005 Hearing is also consistent with Mr. Gearhiser's deposition testimony in this litigation that the state experts would identify a problem and there were "multiple way to solve the problem. And so if it was a problem that would continue, why not create a solution to the problem so that the state would not have that objection." (Gearhiser Dep., at 54-55). Notably, while Mr. Gearhiser testified in deposition that the dialogue with Mr. Riedthaler suggested a "preview feature", Mr. Gearhiser did not define this "preview feature" or otherwise suggest that the so-called "preview feature" provided clear and convincing evidence of disclosure of the "automatically display[]" feature.

219. Regarding the Gearhiser testimony in this case, the Friedman Report, paragraph 291, attaches weight to the Gearhiser deposition testimony at pp.75-78, offered 16 years after-the-fact, for the supposition that Gearhiser had confidence in the "preview solution" that was identified during Riedthaler questioning because of assurances he received from representatives of Pace o Matic and others familiar with the game.

220. Here is the exact Gearhiser deposition testimony as set forth in the pages relied upon by the Friedman Report:

- "somebody indicating well, if the players know ahead of time what they were playing for" (Gearhiser Dep., at 76).

- "But it was certainly more of a background question than whether or not we could create the game" (*Id*., at 77).

- "Q. And do you recall any specific responses to that question from anyone? A. I don't. And if I did, it would be attorney-client privilege, I think" (*Id*.).

- "it was possible", *id*., where "it" refers to "if the players know ahead of time what they were playing for."

221. Based on the Gearhiser deposition testimony, and considering the amount of time (16 years) that passed between the time of the October 2005 hearing and the time of the deposition, neither Gearhiser nor anyone else expressed confidence at the time in the "automatic display of an actual game to be played" prior to game initiation as a technically feasible solution to Riedthaler's stated concerns. The referenced Gearhiser testimony is far too vague and generalized to support the opinion expressed in the Friedman Report. No one knows or can know with any degree of certainty what Mr. Gearhiser is now saying he had confidence in 16 years ago, except for the idea that if a prize preview feature could be added to the then-existing TTF game, that would let the player know what he was playing

for, and thereby improve the legal case that the then-existing TTF game was not an illegal game of chance. For these reasons, I am of the opinion that the Friedman Report fails to show that Reidthaler and/or Gearhiser are an inventor of any claim of the 223 Patent. I am further of the opinion that the October 2005 Hearing transcript is not clear and convincing evidence of any conception or teaching of the Automatic Display Element of the 223 Patent.

VIII. THE FRIEDMAN REPORT FAILS TO SHOW BY CLEAR AND CONVINCING EVIDENCE THAT THE ASSERTED CLAIMS OF THE 223 PATENT ARE NOT PATENT-ELIGIBLE

222. I have been asked to evaluate Defendants' contention, as set forth in the Friedman Report, that the Challenged Claims of the 223 Patent are invalid under 35 U.S.C. § 101 ("Section 101"). (Friedman Report, ¶¶ 149-174). As noted above, I understand from Plaintiffs' Counsel and assume that a defendant must prove invalidity by clear and convincing evidence. I understand and assume that clear and convincing means that the evidence is highly probable and substantially more likely to be true than untrue. Applying this evidentiary standard and the below legal standard for invalidity under Section 101, sometimes referred to by short hand as "*Alice*[5]," I conclude that Defendants have failed to prove Section 101 invalidity by clear and convincing evidence.

[5] *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 218 (2014).

223. Summary of *Alice* Opinions. In summary, when considered as a whole, and in light of the written description, the Challenged Claims are directed to an improved method/system/computer program product for electronic gaming. For example, Claim 44 and its dependent claims are directed to an electronic gaming system utilizing a specific and unconventionally configured game processor based on an unconventional ordering of claim elements (combining testing and automatic display of an actual game to be played prior to initiation of game play) to accomplish a specific result of electronic gaming that is not merely based on chance. Other claims directed to an electronic gaming method are directed to an unconventional ordering of claim elements to create that specific system to accomplish a specific result of electronic gaming that is not merely based on chance. Other claims directed to an electronic gaming computer program product are directed to a specific set of computer program instructions which are, as an ordered combination, unconventional, and which, when executed on a computer, accomplish a specific result of electronic gaming that is not merely based on chance. Each of the claims at issue do far more than recite a mere desired result of an electronic game, but rather, recite a specific technical solution for accomplishing the goals of elevating the level of skill and reducing the level of chance in electronic gaming.

224. I understand from Plaintiffs' Counsel and assume that the below legal standard pertains to the Section 101 invalidity inquiry. Under 35 U.S.C. § 101, "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." I also understand from counsel that there are three judicially-crafted exceptions to Section 101's patent-eligibility principles: "laws of nature, physical phenomena, and abstract ideas." The Friedman Report raises the potential applicability of the third category, "abstract ideas."

225. Further, I understand from Plaintiffs' Counsel and assume that the *Alice* inquiry is two-step: Step One is to determine whether the claims at issue are directed to patent ineligible subject matter, here, according to the Friedman Report, an abstract idea. If such determination is in the affirmative, the Second Step involves the consideration of the elements of each claim both individually and as an ordered combination to determine whether the additional elements (beyond the Abstract idea) transform the nature of the claim into a patent-eligible applications. I understand this sometimes is referred to as a search for an inventive concept.

226. *Alice* Step One: I understand from Plaintiffs' Counsel that in denying the Defendants' motion to dismiss this case on the basis that the 223 Patent lacks patentable subject matter, the District Court found that the claims of the 223

Patent, using Claim 44 as a representative claim, encompass an abstract idea. I assume this to be a correct ruling. As such, I will proceed to the Second Step.

227. *Alice* Second-Step: Regarding the Second Step, I understand from Plaintiffs' Counsel and assume that to find an inventive concept sufficient to transform the claims into eligible subject matter under Section 101, the additional elements that transform the inventive concept must be more than well understood, routine or conventional activity. In applying the exception for abstract ideas, it is important to distinguish between patents that claim the building blocks of human ingenuity from those that integrate the building blocks into something more. It cannot, for instance, simply be the addition of a generic computer, to the abstract idea, without more. At the same time, I understand that that the transformation may take place by combining known elements in a way that was not well understood, routine or conventional at the time.

228. When analyzing whether the claim elements contain an inventive concept under Step Two, I understand that one should examine each claim element individually and "as an ordered combination" of elements. (*See Alice*). An inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces. Thus, claim elements that define a non-conventional arrangement may enable a claim to pass when applying Step Two, even if the individual claim elements are well-understood, routine, and

conventional. Step Two may find an inventive concept in a new combination of steps even though all the constituents of the combination were well known and in common use before the combination was made.

229. My conclusion is that the Challenged Claims of the 223 Patent describe an inventive step going beyond well understood, routine or conventional activity. The arguments set forth in the Friedman Report fail to meet Defendants' burden to prove the contrary by clear and convincing evidence.

230. Claim 44. Like the Court, I will focus my discussion on Claim 44 of the 223 Patent. I then will address the remaining Challenged Claims. Some of the Claim 44 analysis also is applicable to the other Challenged Claims, will not be repeated therein, but instead is hereby incorporated as if stated therein.

231. Claim 44 of the 223 Patent states as follows (with certain key items bolded, and the claim broken down into elements as provided by Plaintiffs' Counsel):

[44P] An electronic gaming system comprising:

[44.1] an electronic game terminal including a touch screen display;

[44.2] a **game processor** for generating an interactive electronic game on the game terminal, the **game processor configured for**:

[44.3] constructing a field having a plurality of elements for the interactive game display wherein each element includes a game symbol from a plurality of predetermined game symbols;

[44.4] determining at least one winning combination for each play of the game;

[44.5] testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field;

[44.6] automatically displaying an actual game to be played on the touch screen game display to a player **prior to initiating activation of game play**;

[44.7] determining if the player has decided to play the displayed game; and

[44.8] displaying an outcome resulting from play of the displayed game.

232. In my view, elements [44.2], [44.5] and [44.6] describe a specially configured electronic gaming processor – one that is configured to test a game field and automatically display a game field to be played to a player prior to the initiation of game play, before the player makes the decision to play the game. Such a specially-configured electronic game processor was not well understood, routine or conventional at the time of the Invention.

233. I have set forth my analysis of the prior art raised in the Friedman Report in other sections of this report. This discussion is incorporated herein by reference. In summary, the prior art version of TTF was the closest prior art. But it did not include the combination of the Testing Element and Automatic Display Element as laid out in the claims of the 223 Patent. Michael Pace conceived of

these limitations, creating the specially configured game processor, in response to legality questions raised in Ohio in October 2005. No such specially configured game processor existed at the time. As discussed in Section X regarding the alleged obviousness of the invention, there is no evidence to support the notion that POSITA would have been motivated to combine prior art references in such a way as to result in the invention of the 223 Patent. This is because the combined Testing/Automatic Display Elements are missing in the prior art and thus necessarily missing in any combination of the prior art.

234. Moreover, far from being conventional or well-understood at the time of invention, configuring an electronic game processor to include the combined Testing/Display Elements would have been counterintuitive to game designers. *See* Section VI(A), *supra*. This specially configured electronic game processor permits the player to see the game board itself before initiating play and allowing the player to decide whether he/she has the skill to win the actual game to be played before he/she commits funds to play the game. Logically, the player would not want to proceed to play a game that he/she lacked the skill to win.

235. I have considered the Friedman Report's arguments that the claims of the 223 Patent do not pass muster under *Alice*, Second Step, and disagree with the analysis and conclusions.

236. The Friedman Report's analysis largely focuses on the fact that the invention of the 223 Patent can be implemented on processors and other hardware that were commonly available in 2006. For instance, in Paragraph 156, the Friedman Report states that the "claims of the 223 Patent simply automate those manual processes, and the automation of those processes is performed by pre-existing technology, using conventional software instructions to implement the game rules." But this ignores the key question: was Mr. Pace's specially configured electronic game processor described in Claim 44 well-understood, routine or conventional?

237. Regarding whether or not Michael Pace invented a specially configured electronic game processor, the Friedman Report makes a number of points with which I disagree. I will not endeavor to address them all but instead provide representative examples of where I think the Friedman Report's analysis is flawed and falls short:

a. The Friedman Report asserts at Paragraph 159 that the prior art shows that the testing step was "carried out prior to displaying the game to the player." But the key point is that the game processor is specially configured to carry out the testing of the invention prior to the player deciding to play the game, making a wager and beginning the game play, not simply before the display of the game after the player has begun game play.

b. The Friedman Report states in Paragraph 160 that changing the order of steps of the prior art TTF "does not result in any technological improvement[.]" But this ignores the fact that displaying the game prior to instituting the game was not in the prior art TTF so it is not simply a change in the order of steps. This is an extra step. This also ignores Mr. Pace's testimony regarding the extensive nature of his programming effort in an effort to achieve the inventive, newly configured processor.

c. The Friedman Report suggests in Paragraph 164 that the Court has construed the "game processor" of the 223 Patent to be conventional. The Court did not do so. The Court constructed "game processor" as "a CPU or microprocessor that executes program instructions to generate a game." Furthermore, the Friedman Report attempts to parse "game processor" from the claim and analyze it outside the context of the processor's configuration as described in Claim 44.

d. Further in Paragraph 164, the referenced prior art processors did not disclose the special configuration of the electronic game processor of the 223 Patent. Nothing in my background or experience, and nothing in the prior art identified by the Friedman Report, shows any teaching of this specially configured electronic game processor, much less that it was well understood or conventional.

e. Similarly, the third-party game processors discussed in Paragraph 164 were not the specially configured electronic game processors of the 223 Patent.

f. In Paragraph 166, the Friedman Report disputes Savvy Dog's reference to firmware. There are different definitions of firmware. But I understand this reference by Savvy Dog is to computer code in binary form located in EPROM. *See* https://courses.lumenlearning.com/zeliite115/chapter/reading-firmware/

g. In Paragraphs 167 and 168, the Friedman Report criticizes the inventive nature of the 223 Patent because the invention took place in response to a legal challenge rather than a technological challenge. I find this criticism unfounded for a number of reasons. First, the Friedman Report points to no authority for why an invention made in response to a legal barrier is any less valid than one made in response to a known technological problem. Further, this argument ignores Mr. Pace's testimony, noted above, regarding the extensive nature of the programming effort it took to arrive at the specially configured electronic game processor of the 223 Patent. Indeed, he tried a number of different approaches before arriving at the specially configured game processor of the 223 Patent.

h. The Friedman Report details in Paragraph 169 the "generic and conventional computer components" used in connection with the specially

configured game processor of the 223 Patent. But, as noted above, this misses the mark as the use of a known computer component, such as an off-the-shelf processor, as an ingredient of what Claim 44 defines as a specially configured electronic game processor, does not negate the inventive nature of the specially configured electronic game processor.

i. In Paragraph 171, the Friedman Report details some of the features of other electronic games allegedly reflected in the prior art, including TTF. Putting aside whether these features were disclosed in the referenced prior art, I understand and assume to be the law, that an invention may be based on combinations of known elements, and that an inventive concept in the Second Step may reside in an unconventional combination of previously known elements. Furthermore, the Friedman Report admits that the enumerated features do not relate to the "preview feature." The Friedman Report continually shifts the focus away from the crucial issue regarding the inventive nature of the specially configured electronic game processor of the 223 Patent. It was not conventional, well understood or routine in 2006 or earlier.

238. Moreover, in Paragraph 171, the Friedman Report refers to individual features that supposedly had been known for over 100 years. But assuming for the sake of argument certain features were known for 100 years and no one developed the specially configured electronic game processor of the 223 Patent until Mr. Pace

did, this only confirms that the invention was not obvious, well-understood, routine or conventional at the time.

239. The Other Challenged Claims Likewise Are Patent Eligible.[6]

240. Independent Claim 1 is directed to a new electronic gaming method created by constructing a game field having a plurality of elements for an interactive touch screen game display on an electronic game terminal wherein each element is filled by a game symbol from a plurality of predetermined game symbols, wherein the game symbols for each element are automatically determined such that there is at least one winning combination for each play of the game but there is no winning combination without player interaction with the game display; testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field; automatically displaying an actual game to be played on the touch screen display to a player prior to initiating activation of game play; receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection; and displaying each winning combination of symbols on the touch screen display. Specifically,

[6] I address the independent claims above and below. The claims that depend upon them are patent eligible for the same reasons.

creating a new and inventive electronic game by the combination of steps in the method, including receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection, renders the subject matter of Claim 1 as a whole an inventive method.

241. The Court did not specifically address Claim 1 in the Court's opinion, but I will assume, without agreeing, that the Court would have reached the same result regarding Step One. Regarding Step Two, the claimed elements of testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, automatically displaying an actual game to be played on the touch screen display to a player prior to initiating activation of game play, and receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection – individually and as an ordered combination – recite an inventive concept and was not generic, well-understood, conventional or routine in the field at the time of invention.

242. Independent Claim 13 is directed to a new electronic gaming system. The system includes an electronic game terminal including a touch screen display; a game processor for generating an interactive electronic game on the game

terminal with a plurality of options selectable by a player, the game processor configured for: (a) constructing a game field having a plurality of elements for the interactive game display wherein each element includes a game symbol from a plurality of predetermined game symbols, wherein the game symbols for each element are automatically determined such that there is at least one winning combination for each play of the game but there is no winning combination without player interaction with the game display; (b) testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field; (c) automatically displaying an actual game to be played on the touch screen game display prior to initiating activation of game play; (d) receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection; and (e) displaying each winning combination of symbols on the touch screen display. Specifically, creating a new and inventive electronic gaming system that includes a game processor configured in the manner of the claim, including the sequence of constructing, testing, automatically displaying, receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection, and displaying each winning combination of symbols on the screen

renders the subject matter of Claim 13 as a whole an inventive system.

243. The Court did not specifically address Claim 13 in the Court's opinion, but I will assume, without agreeing, that the Court would have reached the same result regarding Step One. Regarding Step Two, the claimed game processor configured to practice the elements of testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, automatically displaying an actual game to be played on the touch screen display to a player prior to initiating activation of game play, and receiving the player's selection of a field element as a location for a wild symbol and determining each winning combination of symbols that is formed by such selection – individually and as an ordered combination – recite an inventive concept and was not generic, well-understood, conventional or routine in the field at the time of invention.

244. Independent Claim 25 is addressed to a new computer program product for electronic gaming when executed on a game processor, the computer program product comprising a computer readable storage medium having computer readable code embedded therein, the computer readable storage medium comprising: program instructions that construct a game field having a plurality of elements for an interactive touch screen game display on an electronic game

terminal wherein each element is filled by a game symbol from a plurality of predetermined game symbols, wherein the game symbols for each element are automatically determined such that there is at least one winning combination for each play of the game but there is no winning combination without player interaction with the game display; program instructions that test the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field; program instructions that automatically display an actual game to be played on the touch screen game display to a player prior to initiating activation of game play; program instructions that receive the player's selection of a field element as a location for a wild symbol and determine each winning combination of symbols that is formed by such selection; and program instructions that display each winning combination of symbols on the touch screen display. A product comprised of the specific program instructions arranged in accordance with the claim renders the subject matter of Claim 25 as a whole an inventive concept.

245. The Court did not specifically address Claim 25 in the Court's opinion, but I will assume, without agreeing, that the Court would have reached the same result regarding Step One. Regarding Step Two, the claimed elements of program instructions that test the game field prior to displaying the game to the

player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, program instructions that automatically display an actual game to be played on the touch screen game display to a player prior to initiating activation of game play, program instructions that receive the player's selection of a field element as a location for a wild symbol and determine each winning combination of symbols that is formed by such selection, and program instructions that display each winning combination of symbols on the touch screen display – individually and as an ordered combination – recite an inventive concept or was not generic, well-understood, conventional or routine in the field at the time of invention.

246. As to Independent Claim 37, it is directed to a new electronic game created by an electronic gaming method comprising the steps of: constructing a game field having a plurality of elements for an interactive touch screen game display on an electronic game terminal wherein each element is filled by a game symbol from a plurality of predetermined game symbols; determining at least one winning combination for each play of the game; testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field; automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game

play; determining if the player has decided to play the displayed game; and displaying an outcome resulting from play of the displayed game. Specifically, creating a new and inventive electronic game by the combination of steps in the method renders the subject matter of Claim 37 as an inventive method.

247. The Court did not specifically address Claim 37 in the Court's opinion, but I will assume, without agreeing, that the Court would have reached the same result regarding Step One. Regarding Step Two, the claimed elements of determining at least one winning combination for each play of the game, testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play, determining if the player has decided to play the displayed game; and displaying an outcome resulting from play of the displayed game – individually and as an ordered combination – recite an inventive concept and was not generic, well-understood, conventional or routine in the field at the time of invention.

248. As to Independent Claim 51, it is similar to Claim 44 except that instead of a new game processor, Claim 51 claims a new type of computer program product, a new computer readable storage medium, insofar as a computer

program product having program instructions to test the game field in conjunction with program instructions to automatically display a game to be played prior to initiating the activation of game play create a new and improved, and a tangible technology platform for elevating the level of skill into an electronic game. Specifically, such new type of computer program product with program instructions which operate to enhance a processor so that it tests the game field prior to displaying the game to the player to ensure that a winning combination is not generated inadvertently in completing the field, and previews an actual game to be played to the player before a decision to play is made constitutes an inventive concept.

249. The Court did not specifically address Claim 51 in the Court's opinion, but I will assume, without agreeing, that the Court would have reached the same result regarding Step One. Regarding Step Two, the claimed elements of program instructions that test the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field, and program instructions that automatically display an actual game to be played on the touch screen game display to a player prior to initiating activation of game play – individually and as an ordered combination – recite an inventive concept or were not generic, well-understood, conventional or routine in the field at the time of

invention.

IX. THE FRIEDMAN REPORT FAILS TO SHOW BY CLEAR AND CONVINCING EVIDENCE THAT THE ASSERTED CLAIMS FAIL TO MEET THE WRITTEN DESCRIPTION AND OTHER MENTIONED SECTION 112 REQUIREMENTS

250. The Friedman Report asserts in Section X that that the Challenged Claims of the 223 Patent are invalid under Section 112 of the Patent Code. In Subsection A, the Friedman Report contends that the "Testing Limitation" (referred to herein as the "Testing Element") fails for lack of written description. In Subsections B and C, the Friedman Report argues that certain claims are invalid for indefiniteness. For the reasons set forth below, I conclude that the Friedman Report has provided insufficient support to prove the arguments by clear and convincing evidence. Indeed, I find there is written description supporting the claims and that the challenged claims are sufficiently definite.

A. The Written Description Argument – The "Testing Element"

251. In connection with the written description issue, I assume and apply the following statements of law provided by Plaintiffs' Counsel:

252. Section 112, Paragraph 1 contains the written description requirement as follows:

(a) IN GENERAL.—

> The specification shall contain a **written description** of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

(Emphasis added).

253. The written description test requires that the disclosures of the specification relied upon to reasonably convey to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date. The test requires a thorough examination of the patent as a whole from the perspective of POSITA. The written description requirement does not demand either examples or an actual reduction to practice. An algorithm may be expressed in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner.

254. The written description and claim definiteness requirements do not obligate an inventor to elaborate on principles and practices that are within the ordinary skill of a POSITA. The law is that the specification need not contain, and preferably omits, what is already known to a POSITA.

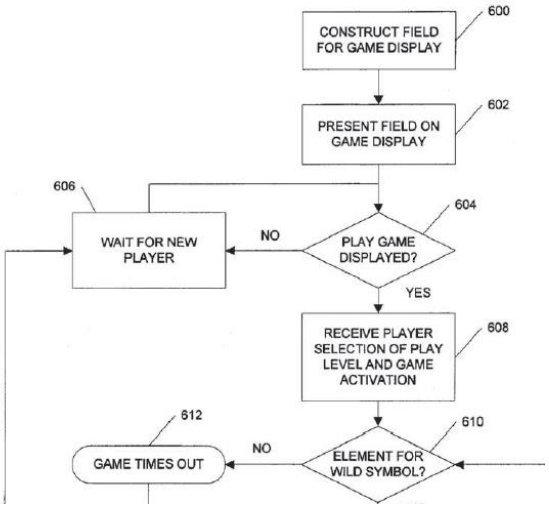
255. The Friedman Report contends that the following exemplary Testing Element claim language from Claim 44 fails for lack of written description:

testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field;

256. The Court construed the Testing Element as follows: "test[ing] the game field prior to displaying the actual game to be played to the player to ensure that a winning combination more valuable than the previously determined winning combination, properly construed, is not generated inadvertently when the player completes a winning combination during play of the game." The Court construed "winning combination" to mean "array of game symbols in the game field yielding a successful outcome." *See* Table of Claim Constructions.

257. Applying the above legal standard and claim constructions, I find that the written description requirement for the "testing" limitation is met by at least the following portions of the specification when read in the context of the 223 Patent as a whole. It should be noted that I have not analyzed the Friedman Report's file history arguments (Paragraph 177) or the arguments regarding disclosures in prior applications (Paragraphs 179-180, 183-185), as I find that the specification of the 223 Patent itself satisfies the requisite written description requirement.

258. FIGURE 6 shows an embodiment of the 223 Patent including the top box where the game is constructed:



259. Column 4, lines 51-64, provides an example of a five-step algorithm used for the construction and testing of a field for game display (this same concept is disclosed in 9:45-67 and 10:29-37):

The Tic-Tac-Fruit electronic game does not pick random fields until testing indicates that one is acceptable. Instead, the field is constructed to meet certain criteria. The steps involved in constructing a field in this electronic game are as follows:

1. chose the number of winning lines (i.e., 1, 2, 3, 4);
2. chose the orientation of each of the winning lines (i.e., horizontal, vertical, or diagonal);
3. chose the symbols for each of the lines (i.e., cherries, plums, bells, etc.);
4. fill in empty spots with random symbols; and
5. test the complete field for compliance with the goals set by steps 1 and 3 and repeat the construction process if compliance fails.

260. The algorithm, including Step 5 (above), discloses the "testing" limitation as it appears in Claim 44 and other claims. From the perspective of a POSITA, the key is that Step 4 – the filling in of empty spots with random symbols – potentially could create additional winning combinations that would render a game out of compliance with the desired number of winning lines (Step 1) or

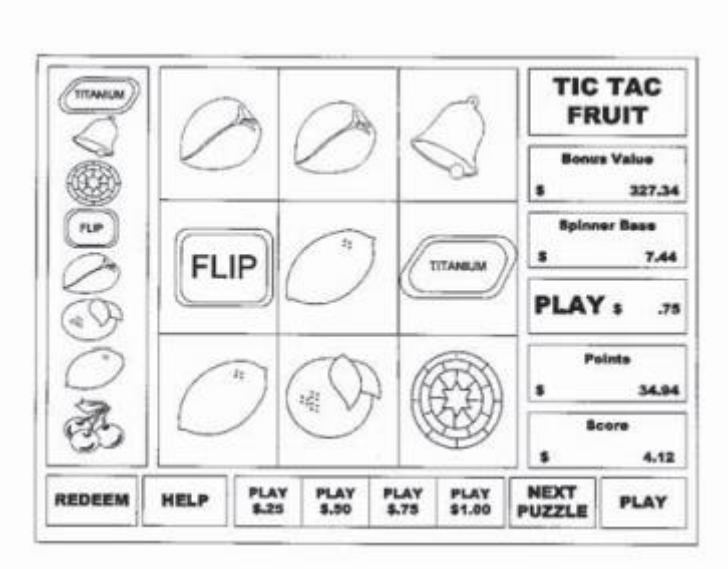
symbols for each of the lines (Step 3). The iterative testing described in Step 5 thus ensures that that "a winning combination more valuable than the previously determined winning combination, properly construed, is not generated inadvertently when the player completes a winning combination during play of the game." While the precise language of the limitation is not expressed in this portion of the specification, that is not determinative because a POSITA would understand the limitation to be present by how the steps of the algorithm operate and interact. I therefore do not agree with the Friedman Report's criticism that POSITA would not see the limitation at issue disclosed in this portion of the specification. (Friedman Report, ¶ 182).

261. With respect to FIGURE 6 shown above, consistent with the foregoing discussion, the 223 Patent specification also states:

> FIG. 6 illustrates the processing logic for an exemplary embodiment having a game preview display. Processing begins, as indicated in step 600, with the construction of a field of elements for a game display wherein each element is filled by a game symbol from the game symbols available. As described above, underlying software algorithms follow several rules of game field construction before displaying the field to the player. These rules include selecting a number of winning combinations for a play of the game; selecting the orientation of each winning combination on the game grid; selecting the symbols for each winning combination; randomly selecting symbols for the remaining elements of the game grid; and testing the field for compliance with at least one of the preceding selections prior to presenting the field to the player.

(223 Patent, at 10:22-37). This passage reinforces my analysis. For example, after random symbols are added, testing to ensure that the number of winning lines and the symbols associated with the winning lines have not changed serves to ensure that there is no other winning combination that could be more valuable than the winning combinations identified in Steps 1-3 of the algorithm.

262. FIGURE 1A helps to show this point:



263. In constructing the game, a POSITA would understand based on the teachings of the specification that the system implementing the algorithm chose 2 potential winning lines running across the top (plums) and diagonally from bottom left to top right (lemons); the upper right panel is then replaced with a non-plum or lemon figures so no winning combination is displayed; and then the remaining spots are filled in with random symbols. (*See* 223 Patent, at 6:31-33, stating "The key symbol needed to obtain the highest value prize is replaced with a non-winning

symbol prior to display to the player."). The 5th Step is to make sure that the possibility of more winning combinations than desired (2) is **not** created during Step 4. For instance, if the lower right-hand box randomly was filled in with Titanium during Step 4, this would create the possibility of three winning combinations (titanium vertical right now being a third) which would not be in compliance with the choices made in Steps 1 or 3. Again, compliance with Step 5's iterative testing to ensure compliance with the rules of Steps 1 and 3 thus ensures that that "a winning combination more valuable than the previously determined winning combination, properly construed, is not generated inadvertently when the player completes a winning combination during play of the game."

264. The Prize Table set forth in Column 5 is also noteworthy in that it associates monetary values as prizes worth varying amounts (dependent on play level and type of symbol) with each of the potential winning combinations:

TABLE 1

Tic-Tac-Fruit (Classic)

Symbol/Denomination	50¢	$1.00	$2.00	$4.00
3 Titanium	$250*	$500*	$1,000*	$2,000*
3 Spinner	80¢	$1.60*	$3.20*	$6.40*
3 Flip	*	*	*	*
3 Bell	$2.50	$3	$10	$20
3 Plum	$1	$2	$4	$8
3 Orange	8¢	16¢	32¢	64¢
3 Lemon	4¢	8¢	16¢	32¢
3 Cherry	2¢	4¢	8¢	16¢

265. A POSITA would understand that the algorithm that constructed the playing field also would determine the potential prizes depending upon the

denomination selected by the player and the location of the wild card selected by the player – in our example the prize if the player placed the wild card in the upper right-hand corner resulting in two winning lines of plums and lemons, with prize amounts broken down by amount of play level (*e.g.*, $1.00). The algorithm thus ensures that "a winning combination more valuable than the previously determined winning combination, properly construed, is not generated inadvertently when the player completes a winning combination during play of the game."

266. Finally, the discussion of testing discussed in Column 6, lines 19-33, of the 223 Patent is also worth noting:

Essentially, the Tic-Tac-Fruit electronic game presents a task whereby the player must select the appropriate field element to replace with a wild symbol in an effort to obtain the highest value game outcome offered by the device. The prize is determined by a random selection from a finite pool of available prizes. The device selects the quantity of lines that will present a winning outcome. Prizes may be presented on one, two, three, or four lines in a single game play. The device selects the level of prize(s) to be awarded. A software algorithm assesses the arrangement of the prize(s) to be offered to assure that no other, more valuable prizes will inadvertently be presented. The key symbol needed to obtain the highest value prize is replaced with a non-winning symbol prior to display to the player.

267. A POSITA would appreciate that the testing such that "no other, more valuable prize would inadvertently be presented," is similar to the testing in Step 5 above as a more valuable prize inadvertently would be presented if Step 4 created a third winning line. POSITA also would note that this testing closely mirrors the language of the "testing" limitation, though it uses the word prize instead of the

"winning combination" words of the limitation. This difference is not material to a POSITA when determining whether an outcome is more or less valuable than the desired outcome, given the disclosure of the Prize Table associating each of the potential winning combinations with monetary prizes.

268. The Friedman Report also argues that the specification does not disclose an algorithm. (Friedman Report, ¶ 182). But the above portions of the specification, read in the context of the 223 Patent as a whole and applying the law as provided to me, sufficiently disclose an algorithm underpinning the Testing Element of the 223 Patent claims.

269. In summary, after reviewing the specification and arguments made by the Friedman Report, I conclude that the specification provides written description support for the "testing" limitation. The Friedman Report does not provide clear and convincing evidence to the contrary.

B. Alleged Indefiniteness of "Predetermined Probability of Success" Term

270. The Friedman Report asserts in Paragraph 188 that Claims 11, 22 and 33 are indefinite under Section 112, ¶ 1, regarding the following limitation: "wherein each winning combination of symbols has a predetermined probability of occurrence for a play of the game." For the below reasons, I disagree with the Friedman Report. Moreover, the Friedman Report has not supported the argument with clear and convincing evidence.

271. I assume and apply the following statements of law provided by Plaintiffs' Counsel: Claims are indefinite if, when read in light of the specification and file history, they fail to inform, with reasonable certainly, those skilled in the art about the scope of the invention.

272. I note that the Friedman Report does not state that Defendants have any problem determining the scope of the invention regarding this term. Indeed, a POSITA would understand that the very essence of electronic gaming is based on the operator knowing in advance the predetermined probability of occurrence for a given play, and how much could be won or lost with such play. This is how the operator ensures that the operator makes money on the game. In fact, the Friedman Report confirms this in Paragraph 171(d), stating in regards to "each winning combination of symbols has a predetermined probability of occurrence for a play of the game" that "mathematical behavior is commonplace in slot machines and is admitted to be known by the background section of the '223 patent at 1:24-28."

273. Notwithstanding the foregoing quotation from Paragraph 171 of the Friedman Report confirming Defendants' understanding that this term is not only supported in the background section of the 223 Patent specification, but also "commonplace" and "admitted to be known" by a POSITA, the Friedman Report puts great weight on the false observation that there is "no written description" for

this term. (*Id.*, ¶ 188). As I understand the legal standards as provided to me by Plaintiffs' Counsel, this argument improperly conflates the "written description" and "indefiniteness" inquiries.

C. Alleged Indefiniteness of "Additional Game Field" Term

274. The Friedman Report asserts in Paragraphs 189-191 that Claims 45 and 46 are indefinite under Section 112, ¶ 1, regarding the following limitation: "a component for generating and displaying an additional game field simultaneously on the game display in proximity to the displayed game." For the below reasons, I disagree with the Friedman Report. Moreover, the Friedman Report fails to support this argument with clear and convincing evidence.

275. I understand from Plaintiffs' Counsel that Savvy Dog has stipulated that the above term is a "means plus function" term. In this context, I further have been instructed regarding the law that with regard to the "means for" performing an advanced software function, the corresponding structure usually is not a general computer, but rather the special purpose computer programmed to perform a disclosed algorithm. To be properly definite, for instance, the specification may have to disclose algorithmic structure. However, I understand that structure may also be software known in the art if it is identified in the patent's specification so long as it is correlated with the function of the claim.

276. Again, the Friedman Report does not state that Defendants have any problem determining the scope of the invention regarding this term. Indeed, the specification is replete with discussion regarding the display of game fields. Displaying an "additional" game field "in proximity to the displayed game" would have clear meaning to POSITA.

277. FIGURE 7 of the 223 Patent shows an additional game (outlined in red below) in proximity to the displayed game:

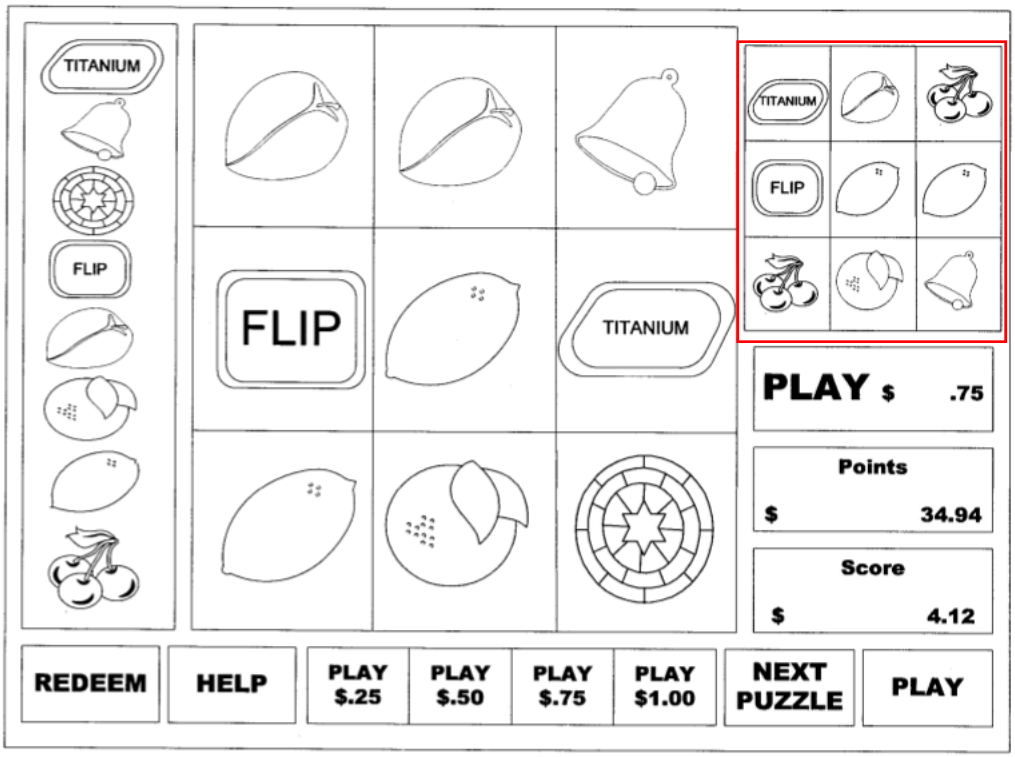


FIG. 7

278. The specification states that FIGURE 7 "illustrates an exemplary game display having a preview screen displayed adjacent to the current game display." (223 Patent, at 3:34-36).

279. The 223 Patent specification states:

> A preview of the next game could be displayed adjacent to the current preview screen. In order to get to the next game, the player would have to play the currently previewed game. An example of such a game display is depicted in FIG. **7** in which the current game is previewed on the main portion of the display and the next game (e.g., at the same play level or denomination) is displayed adjacent to the current game display in the upper right portion of the display. The exact location of the adjacent game preview is not important, but the smaller game preview on the display device must have sufficient resolution to provide a clear, unambiguous preview of the next game. After the player plays the game displayed in the main portion of the display, the previously displayed smaller game preview will be displayed on the main portion of the display and a new game preview will be displayed adjacent to the main display.

(223 Patent, at 11:27-42).

280. This text read in the context of the teachings of FIGURES 6 and 7 supplies an algorithm supporting "a component for generating and displaying an additional game field simultaneously on the game display in proximity to the displayed game." Specifically, the 223 Patent specification states:

> FIG. 6 illustrates the processing logic for an exemplary embodiment having a game preview display. Processing begins, as indicated in step 600, with the construction of a field of elements for a game display wherein each element is filled by a game symbol from the game symbols available. As described above, underlying software algorithms follow several rules of game field construction before displaying the field to the player. These rules include selecting a number of winning combinations for a play of the game; selecting the orientation of each winning combination on the game grid; selecting the symbols for each winning combination; randomly selecting symbols for the remaining elements of the game grid; and testing the field for compliance with at least one of the preceding selections prior to presenting the field to the player.

(223 Patent, at 10:22-37).

281. A POSITA would further understand that the component for generating and displaying an additional game field is the use of the foregoing algorithm for construction of a game field, combined with the known Tic-Tac-Fruit software's graphics to generate and write a constructed game field of symbols arranged in a 3x3 array to the screen for graphical display.

X. THE FRIEDMAN REPORT FAILS TO SHOW BY CLEAR AND CONVINCING EVIDENCE THAT THE ASSERTED CLAIMS ARE ANTICIPATED AND/OR OBVIOUS

282. Section XI of the Friedman Report is entitled "Anticipation and Obviousness of the '223 Patent." (Friedman Report, ¶¶ 101-144). In summary, based on the law as supplied to me and set forth below, and applying the Court's claim constructions, there is no clear and convincing evidence of anticipation. There also is no clear and convincing evidence to support the obviousness arguments. Simply put, and without limiting the below discussion, none of the prior art identified by the Friedman Report and analyzed by Friedman disclosed element 44.5 (the "Testing Element") in combination with element 44.6 (the "Automatic Display Element"). Consequently, even if there were a motivation to combine various pieces of the prior art, which motivation has not been established in the Friedman Report, it never adds up to obviousness[7] because these elements

[7] The same analysis applies to these elements as they appear in other claims.

still are missing. The Friedman Report's unsubstantiated resort to the supposed "common sense" or "creativity" of a POSITA does not fill these holes.

283. In Section VI, I have addressed issues the Friedman Report raises regarding TTF, Kowell and NudgeMaster. I incorporate that discussion herein.

284. Also, while I comment on certain of the alleged prior art identified and analyzed in the Friedman Report, I do so to exemplify at a high level why the art is different than the invention of the 223 Patent and does not disclose the Automatic Display and Testing Elements. It is not at all intended to be a comprehensive summary of the discussion of what is disclosed in the art.

A. Pertinent Law Assumed and Applied

285. I understand and assume that patent claims are presumed to be valid. The validity can only be overcome by clear and convincing evidence.

286. I understand and assume that claims are invalid for anticipation only if a single prior art reference discloses each and every limitation of the claim. References can disclose limitations expressly or inherently, and a limitation is inherently present if a POSITA would understand it is necessarily present from the context of the reference.

287. I also understand and assume that to be anticipatory, the prior art must not only disclose all elements of the claim, but must show all elements arranged in

the same order as the claims. The reference also must enable a person of ordinary skill to make the invention without undue experimentation.

288. I understand and assume that obviousness, a combination of prior art that renders the patent claims at issue invalid, is a question of law based on underlying factual determinations. These determinations include: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness, such as commercial success, long-felt need, failure of others, praise, unexpected results, and copying.

289. I understand and assume that a patent challenger must demonstrate that a skilled artisan would have had reason to combine the teaching of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so. The motivation to combine must go beyond mere conclusory statements. Merely identifying a problem is not enough – the skilled artisan must have motivation to combine the particular prior art references, rather than just motivation to solve the problem.

290. I understand and assume that it is necessary for the decision maker to forget what they have been taught about the claimed invention and consider only what one skilled in the art knew at the time the invention was made. A patent is not

proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.

291. I understand and assume that, in connection with the obviousness analysis, unsubstantiated claims of common sense or creativity alone cannot satisfy a missing claim element; it must be supported by evidence and a reasoned explanation.

292. I understand and assume that if the combination of elements arranged in the same manner as the patent claims cannot be explained, it is likely that the combination was derived by impermissibly using in hindsight the applicant's specification as a roadmap.

B. Applicable Claim Constructions

293. In discussing Section XI of the Friedman Report, I base my opinions on the Court's construction for certain claim elements, and where appropriate, I used language from the claims as properly construed by the Court.

Claim Element in Dispute	Construed Terms
[44.5] "testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is not generated inadvertently in completing the field"	The Court has construed: • "prior to displaying" as "before making visible on the touch screen display," • "winning combination" as "array of game symbols in the game field yielding a successful outcome," and • "testing the game field prior to displaying the game to the player to ensure that a winning combination more valuable than the determined winning combination is

Claim Element in Dispute	Construed Terms
	not generated inadvertently in completing the field" as "testing the game field prior to displaying the actual game to be played to the player to ensure that a winning combination more valuable than the previously determined winning combination, properly construed, is not generated."
[44.6] "automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play;"	The Court has construed: • "an actual game to be played" as "the constructed game field of the game to be played" and • "automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play" as "automatically displaying an actual game to be played, properly construed, on the touch screen game display to the player before the player commits to play the displayed game."

C. No Plausible Evidence of Anticipation, Much Less Clear and Convincing Evidence

294. As set forth in Subsection D below, the Friedman Report fails to identify any anticipatory prior art reference, much less clear and convincing evidence of anticipatory prior art. The focus of Section XI of the Friedman Report instead plainly is on obviousness.

D. No Clear and Convincing Evidence of Obviousness

295. I also conclude that there is no clear and convincing evidence to support the Friedman Report's conclusions that the Claims of the 223 Patent are obvious. Below, I first provide a summary of the status of the electronic gaming industry in 2005, an important backdrop for my comments on obviousness. I next set forth in chart form my comments regarding the art cited in and analyzed in the Friedman Report, how the Friedman Report sometimes mischaracterizes it, and why this art, whether alone or in combination, does not render the claims of the 223 Patent obvious. Finally, while I have not been asked to address in detail secondary indicia of non-obviousness, I provide a few observations regarding what I see in the Friedman Report bearing on this topic.

296. Overall, my opinions are that given the level of ordinary skill in the art and the state of the electronic gaming industry in 2005, the contents and teachings of the prior art identified in and analyzed in the Friedman Report show that the combination of the Testing Element and Automatic Display Element of the

223 Patent claims were not known or suggested to a POSITA at the time of invention, and are not obvious when judged through the perspective of a POSITA. Although the Friedman Report impermissibly uses knowledge of the claims of the 223 Patent as a roadmap for hunting through the prior art looking for pieces of the claims of the 223 Patent, the analysis falls short of showing that the combination of critical elements of the 223 Patent were obvious to a POSITA. Indeed, as noted, the combination was counter-intuitive.

i. *Background: The Electronic Gaming Industry*

297. As of 2005, the electronic gaming industry was a fast-paced industry attracting thousands of game developers, with terrific incentives to innovate. This is an important backdrop to the Friedman Report's obviousness arguments. If there was a problem that could be easily solved and money to be made, it would have happened before Mr. Pace's 223 Patent.

a. Exemplary Organizations and Conferences

298. The Game Developer Conference (GDC) is an annual event was hosted in the San Francisco Bay Area for game developers. 2005 was the 19th annual event. (https://www.gamedeveloper.com/business/game-developers-conference-2005-preview). The 2005 event reported over 12,000 attendees. (https://en.wikipedia.org/wiki/Game_Developers_Conference).

299. Ernest Adams established the Computer Game Developers Association (CGDA) in 1994, with the aim of creating a true professional association to give game developers a voice and a way to come together to advance the state of the art. (https://igda.org/about-us/).

300. The International Game Developers Association (IGDA) is the world's largest nonprofit membership organization serving all individuals who create games. (https://igda.org/). The IDGA was formed by renaming the CGDA in 1999. (https://igda.org/about-us/).

301. Out of the GDC came the Independent Games Festival (IGF), to reward innovative computerized games. 2005 was the seventh appearance of the festival at the GDC. The pot for 2005 was at $40,000 in prizes, including two $15,000 grand prizes for winners of the Open (more than 15 megabytes) and Web/Downloadable (less than 15 megabytes) categories. (https://www.gamedeveloper.com/business/game-developers-conference-2005-preview).

302. The Game Developers Choice Awards is the game industry's only open, peer-based awards show. Any member of the IGDA may nominate games, and then the membership votes on the finalists. As with the IGF, the individual creators are named as the recipients of the awards. (https://en.wikipedia.org/wiki/Game_Developers_Conference). GDC hosts these awards ceremonies. For

example, GDC hosted the 5th Annual Game Developers Choice awards in 2005. (https://www.gdcvault.com/play/1024718/5th-Annual-Game-Developers-Choice).

303. At the GDC, an event called the Game Design Challenge was held, sponsored by game designer Eric Zimmerman. The Game Design Challenge that faced the participating designers was created as a commentary to the current state of the game industry. The March 24, 2006 Challenge was won by Harvey Smith. (https://www.gamasutra.com/view/feature/2633/gdc_the_game_design_challenge_.php).

b. Colleges and Universities Were Adapting

304. At the University of Southern California, the Viterbi School of Engineering's Department of Computer Science and the School of Cinematic Arts' Interactive Media and Games Division combined to create a game design program in 2005. (https://www.gamedesigning.org/schools/usc/).

305. Established in 2005, Michigan State University's Game Design and Development program is housed in the Games for Entertainment and Learning (GEL) Lab. The GEL Lab serves as a center for researching the meaning and possibility of games. (College Gazette, "The 10 Best Video Game Design Schools in the US," Nov. 15, 2021, https://collegegazette.com/best-video-game-design-schools-in-the-us/).

c. Growth in Supply, Demand and Revenues

306. Fueled by a growing portable gaming market, 2005 sales of video game software and hardware topped $10.5 billion, a six percent increase over 2004's $9.9 billion and topping 2002, which held the previous record of $10.2 billion, according to The NPD Group. (CNN Money, Jan. 14, 2006, https://money.cnn.com/2006/01/13/technology/personaltech/gamesales/; *see also* Banerjee, "Video game sales up 6% in 2005," MarketWatch, https://www.marketwatch.com/story/video-game-industry-grows-6-in-2005).

307. Others have noted that these numbers exclude important categories, such as spending on online games. A study by Price Waterhouse Coopers shows that U.S. spending on entertainment software for all platforms in 2004 reached $8.2 billion. The study also estimates that worldwide spending on entertainment software in 2004 reached $25.4 billion. (Crandall, "Video Games: Serious Business for America's Economy," ResearchGate March 2007, at 2, https://www.researchgate.net/publication/228230702_Video_Games_Serious_Business_for_America's_Economy ("Crandall")).

308. The rise of Internet and mobile in the early 2000s further contributed to the growth of the electronic gaming industry. (Wallach, "50 Years of Gaming History, by Revenue Stream (1970-2020)," https://www.visualcapitalist.com/50-years-gaming-history-revenue-stream/).

309. The average cost of developing a video game in the early 1990s was $40,000. The average cost in 2004 was $10 million for a large budget title. The increase is due to the recent demand for three dimensional graphics, artificial intelligence, and enhanced voice and sound effects. (Crandall, at 5).

310. Entertainment software companies have invested a large share of revenues into research and development in a race to provide ever more innovative games. Electronic Arts spent between 16 and 22 percent of revenues per year on research and development, and we estimate that the industry spent $1.6 billion in 2004. (Crandall, at 5).

311. Entry-level workers in the entertainment software industry typically could earn significantly more than the average recent college graduate. Entry-level game programmers could expect to earn about $60,152 per year. (Crandall, at 5). According to a 2006 survey, which included attendees at the GDC, the average salary in 2006 over all American game programmers was $80,886. (https://www.gamedeveloper.com/pc/2006-game-developer-salary-survey-reveals-industry-trends).

312. There were roughly 50,000 direct employees working in video game development in 1998 in the United States. Consumer expenditures on entertainment software in 2004 supported 144,000 full-time workers in the United States. Given the projected increase in sales, as of 2007, the entertainment software

industry was expected to support a quarter of a million jobs by 2009. (Crandall, at 5).

d. Anecdotal Evidence of the Popularity and Explosion of Electronic Gaming

313. Fun Technologies dealt with companies including AOL, Virgin and Eurosport to run their so-called casual gaming sites. It also operated Skilljam.com, and aggregated users from across multiple sites to increase the "pot" available to the winners. Fun would keep 25% of players' entry fees to share with its access partners while the rest would go into the pot. The more people paid to play, the more money could be won. Fun had, as of 2005, 9 million registered users, mostly in the US, who spent an average of $100 a month. ("Liberty bets £120m on online games of skill," Guardian, Nov. 23, 2005, https://www.theguardian.com/business/2005/nov/23/newmedia.citynews).

314. In 2005, North American TV and Internet company Liberty Media paid $200m for a majority ownership stake in Fun Technologies, which the Guardian described as a "bet on the appeal of online games of skill and fantasy sports competitions." (*Id.*).

315. Casino gaming was a thriving market by 2005. One of the largest and most successful companies in the industry, International Gaming Technology ("IGT"), was founded in 1971 as a gaming hardware and tech solutions business for land-based companies. Now it is one of the top software developers with

12,000 employees. (https://www.suffolkgazette.com/news/top-5-software-developers-in-the-gaming-industry/).

316. According to the press kit made available on its web site as of March 14, 2006, IGT was "a world leader in slot machine and video gaming machine design and production. The Company has set the standard for product innovation throughout its 25-year history. IGT products include the S2000™ and Reel Touch™ spinning reel slots, the Game King® multi denomination, multi game video product, a full line of interactive video iGames™, the EZ Pay™ Ticket System, and the Japanese pachisuro slot. IGT also makes proprietary software for MegaJackpots® games like Megabucks® and Wheel of Fortune®, as well as the IGT Advantage™ Casino System, a total casino management toolkit." At that time, IGT employed "nearly 5,000 people worldwide." (https://web.archive.org/web/20060314213031/http://www.igt.com/Content/base.asp?pid=8.17.35.17).

317. In 1984, IGT President George Drews said his company's focus was on the "video generation" for slot machine play, adding, "It's absolutely essential." (https://www.rgj.com/story/money/business/2014/07/16/timeline-igt-years/12728037/).

318. In March 1986, in response to California's new state lottery, IGT started Megabucks, a progressive slot machine linking Nevada casinos via phone line with a giant computer at IGT headquarters. (*Id.*).

319. By April 1991, IGT ranked 938th among Business Week magazine's 1,000 most valuable companies in America. (*Id.*).

320. In August 1996, IGT created a new division to develop interactive casino games. (*Id.*).

321. In July 2001, IGT agreed to acquire Las Vegas-based Anchor Gaming in a $1.4 billion stock deal. (*Id.*).

322. In May 2002, IGT was named Nevada's *e*Company of the Year. (*Id.*).

323. Net Entertainment is based in Sweden where it was launched in 1996. They employ more than 1,000 employees worldwide and its games are used by over 200 clients, including some of the largest gaming operators in the world. (https://www.suffolkgazette.com/news/top-5-software-developers-in-the-gaming-industry/).

324. Microgaming launched in 1994, one of the first in the business, and is most famous for Mega Moolah, the most played online slot machine on the market today. With over 1200 different casino titles over the years, they are best known for popular branded blockbusters including Lara Croft (2005), with new titles across desktop and mobile platforms launched each month. Many games feature

pooled jackpots which allow multiple licensees to pool their jackpots together into one giant pot. (*Id.*).

325. Founded in 1999, Playtech now has 140 global licensees working across 20 regulated jurisdictions administered through offices in 19 countries and around 6,000 employees focused on the continuing development of great gaming products and content. Playtech has become the most successful iGaming supplier in the world today, thanks to casino software developers and other specialists working in what is colloquially known as the "University of Gaming". (*Id.*).

326. Founded in 2006, Evolution Gaming is best known for its award-winning live dealer casino games in poker, roulette, baccarat, blackjack and others. (*Id.*).

327. In my home province of Ontario there were over 22,000 slot machines in 2004/2005 fiscal year. These machines generated gross revenue over three billion dollars that year, an average of well over $100,000 per slot machine that year. (https://www.ola.org/sites/default/files/node-files/committee/report/pdf/2006/2006-12/report-2-EN-OLGC-Eng.pdf).

328. I was interested in the financial success of these slot machine games and why players would spend so much money on these games. In about 2000 I had started studying the games and re-engineering the games to gain a detailed understanding of the game design. During the years 2000-2005, and continued

until today, I have simulated slot machine games as part of my research and knowledge translation work so that the addiction counsellors and others can better understand the experience of the players who were losing over $3 billion in 2004/2005.

329. For example, I studied a 2003/2004 six-part article by John Wilson in "Slot Tech Magazine" where he explained in detail the design of a typical slot machine game including showing the design documents, called PAR Sheets, for those games.

- Wilson, J. (2003, December). Slot machine volatility index. Slot Tech Magazine, 10–17.
- Wilson, J. (2004, January). Virtual reels? Physical reels? Just the real truth. Slot Tech Magazine, 18–22.
- Wilson, J. (2004, February). PAR excellence: Improve your edge. Slot Tech Magazine, 16–23.
- Wilson, J. (2004, March). PAR excellence: Part 2. Slot Tech Magazine, 16–21.
- Wilson, J. (2004, April). PAR excellence: Part 3. Slot Tech Magazine, 20–26.
- Wilson, J. (2004, May). PAR excellence – Improving your game – Part IV. Slot Tech Magazine, 21–24.

- Wilson, J. (2004, June). PAR excellence – Part V: The end is here! Slot Tech Magazine, 24–29.

330. Thus in 2003/2004 the information on the design of a slot machine was known in the electronic game industry. I was not aware of any slot machine games at the time that that did Testing/Automatic Display Elements as in the claims of the 223 Patent (*e.g.*, elements 44.5 and 44.6).

331. Joe Kaminkow is a legendary electronic game designer. Kaminkow was inducted into the American Gaming Association's Gaming Hall of Fame in the Class of 2017, although he easily could have landed a spot among the industry's elite in the late 1990s, when, International Game Technology where he was employed as a game designer, rolled out Kaminkow's groundbreaking Wheel of Fortune slot machine. (https://www.cdcgamingreports.com/commentaries/game-designer-joe-kaminkow-not-finished-creating/).

332. Kaminkow joined IGT in the late 1990s and when he left in January 2012, he was the company's vice president of game design. Kaminkow holds over 130 patents in the world of gaming and made it into the Pinball Hall of Fame. (https://www.businessinsider.com/talent-leaving-igt-2013-2).

333. To my knowledge and based on considerable research in the field, Kaminkow never designed a game that did Testing/Automatic Display Elements of the 223 Patent.

ii. *Chart Response to Friedman Report Art that Allegedly Renders the Claims of the 223 Patent Obvious*

a. Response to Friedman's Invalidity Contentions Regarding Prior Versions of TTF

334. As discussed above, the prior art version of the TTF game does not disclose the combination of the Testing Element – "testing the game field prior to displaying the game to the player" element (e.g., element 44.5) – with the Automatic Display Element (e.g., element 44.6):

Prior Versions of Tic-Tac-Fruit (TTF) – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
The Friedman Report alleges that the prior art version of the TTF meets the element. (Friedman Report, ¶ 230).	Previous versions of TTF do not disclose this element when read in conjunction with the Automatic Display Element, because a POSITA would understand that prior art TTF did not disclose or perform testing, and automatically displaying the constructed game field *before* initiating activation of game play, which is required by element 44.5 and 44.6. The Friedman Report does not dispute this. (Friedman Report, ¶ 192 ("…testing, and displaying the game field before 'initiating activation of game play[.]'")). To the contrary, as shown in this report, a POSITA would understand that any testing in the prior art would only take place after initiation of game play, and therefore, that the prior art TTF computer code was incompatible with the ability to generate and test a game field prior to initiating activation of game play.
The Friedman Report cites to *Michaelson*'s "testing to ensure that a pool of predetermined	The combination of TTF and Michaelson also does not render this element obvious, as a POSITA reading Michaelson would conclude

Prior Versions of Tic-Tac-Fruit (TTF) – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
game outcomes includes at least one of the proposed game outcome" as rendering this element obvious. (Friedman Report, ¶ 230; *id.*, at Appendix A-1, element 44.5).	that the reference does not teach performance of any "testing" of any game field. The Friedman Report is factually incorrect with regard to a POSITA's understanding of Michaelson. To a POSITA, Michaelson's game terminal generates proposed outcomes. Then, there is a step of checking with a central server to authorize the proposed outcome based on a pool of outcomes stored at a central server. (Michaelson, [004], [0012-13], [0026-28]). Michaelson, however, does not perform any "testing" as per the Testing Element of the 223 Patent. The server has a "block" of outcomes or "tickets". When the game terminal generates an "outcome," it will check with the central server (unbeknownst to player) to check and see if the outcome is still available; if not, the machine generates another outcome and checks with the central server. Once a proposed outcome is authorized by the server, the prize money, if any, is paid to the player and the proposed outcome is removed from possible outcomes on the server for next play. A POSITA reading Michaelson would not understand it to teach the Testing Element. As a result, Michaelson does not meet this claim element, and further, cannot be combined with TTF to meet this element.
The Friedman Report states in a conclusory manner that a POSITA would be motivated to perform the Testing Element, "to prevent erroneous game fields from being presented that could result in unexpected wins and more valuable than intended prizes from potentially being won."	The Friedman Report's assertion here is unsupported and, as shown above, is based on a misunderstanding of how a POSITA would understand the teachings of Michaelson and prior art TTF. Properly understood, the combination of Michaelson, or modification of Michaelson, with TTF would not render this element obvious to a POSITA. First, as mentioned above, Michaelson does not perform any "testing" of any game field. Second, because Michaelson relies on a

Prior Versions of Tic-Tac-Fruit (TTF) – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
(Friedman Report, at Appendix A-1, at 40). It asserts that Michaelson renders this conclusion obvious, and that "a POSITA would have been motivated to combine the testing teachings of Michaelson with several other gaming references,[8] including TTF, that similarly teach games wherein testing is performed and to modify Michaelson's game in view of these teachings to implement testing such as that performed in TTF that ensures a more valuable winning combination will not be generated inadvertently when the player plays the game (a modification that would be easy to achieve through mere software modifications and also yield predictable results in terms of preventing undesired wins and payouts)." (Friedman Report, ¶ 249).	secondary server to perform verification for a payout, there is no motivation to test a field at all in the device, much less test a field prior to displaying the game to the player, and additionally, testing the game field before the player has initiating activation of game play. In Claim 44, in accordance with the 223 Patent, when a field with at least one winning combination is generated (per elements 44.3 and 44.4), some of those properly-generated fields potentially would not pass the testing in step 44.5. This is different from how a POSITA would read Michaelson. There is no need for testing of fields in Michaelson, as there is no indication that the properly-generated outcome could be an invalid outcome. Although Michaelson does not discuss this, to the extent the idea of an improperly-generated outcome came into the mind of a POSITA, a POSITA would know that any such invalid outcome in Michaelson would only occur, if ever, because of an error in the program. The possibility of an erroneous outcome is not even addressed in the 223 Patent. Conversely, with regard to the 223 Patent, the algorithm used to generate the field in elements 44.3 and 44.4 could be expected to cause an inadvertent winning combination that the system had not (yet) accounted for, and that is not caused by an error in the program, but by the proper functioning of the program. This is what provides a motivation for testing the game field,

[8] (*See* Friedman Report, fn 1).

Prior Versions of Tic-Tac-Fruit (TTF) – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
	in accordance with element 44.5, otherwise the player could sometimes win more than the determined winning combination of elements 44.3/44.4 without any system error. Here again, Michaelson does not teach any manner of testing a properly-generated game field, and thus does not render this element obvious to a POSITA.

335. As discussed above, the prior art TTF lacks the Automatic Display Element – "automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play" element (*e.g.*, element 44.6) – by itself or in conjunction with other references.

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
According to Friedman, prior art versions of TTF provided a display of an actual game to be played on the touch screen game display to a player after initiating activation of game play. (Friedman Report, at Appendix A-1, element 44.6). The Friedman Report also stated that "a POSITA would have found it obvious to reorder the steps of displaying and initiating	First, the Friedman Report acknowledged that prior art TTF does not meet this element. (*See* Freidman Report, ¶ 231 ("…prior versions of TTF provided a display of an actual game to be played on the touch screen game display to a player <u>after</u> initiating activation of game play.")). The prior art TTF game only teaches automatically displaying the constructed game field of the game to be displayed to the player <u>after</u> the player commits to play, which was consistent with the electronic gaming industry practice. A POSITA thus would not understand prior art TTF to teach this element.

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
activation because there are only two possible orderings (either the displaying comes before or after the initiating activation), the result of each ordering would have been predictable and unsurprising to a POSITA." (Friedman Report, ¶ 231).	
The Friedman Report also contends that "showing a player what they were playing for," which purportedly is "a concept… over 100 years old," renders this element obvious. (Friedman Report, ¶ 239) (emphasis added)).	The Friedman Report analysis falls far short of showing that the prior art taught this claim element. First, the Friedman Report fails to provide any evidence regarding why "showing a player what they were playing for" or showing "exactly what they would win" would satisfy the Court's construction of "automatic display of an actual game to be played." Furthermore, providing an indication of what the prize, payment, or award would be for a game falls short of teaching the desirability of automatically displaying the constructed game field of the game to be played to the player before the player commits to play. As indicated elsewhere in this report, such a teaching would be counterintuitive to a POSITA. Furthermore, a POSITA understanding that in prior art TTF, the construction and testing of any game field only occurs after the initiation of game play by the player would understand that prior art TTF was incompatible with a preview of an actual game to be played as construed by the Court, because the game field in prior art TTF could not be generated

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	until after the player committed funds and pressed PLAY to initiate game play. *See also* Section VI(E), regarding Mr. Riedthaler's testimony.
The Friedman Report additionally opines that a POSITA would have been motivated to modify TTF to include a preview feature, rendering this element obvious. • Kowell's "preview" button… "shows the player the first step of the game to be played…" (Friedman Report, ¶ 198) • McClintic's "gaming machine with matrix of indicia and an indicia-matching game, including the features of an 'initial brief revealing of indicia' and a 'sneak peek.'" (*Id*. at ¶ 207) • NudgeMaster's "press here to view next play" button (*Id*. at ¶232)	As noted, a POSITA would understand that prior art TTF is incompatible with the Automatic Display Element, and thus be led away from the combination of prior art TTF with this element. The Friedman Report does not explain any aspect of any prior art reference and how it actually meets the claim construction of the Automatic Display Element. Despite this shortcoming, references such as Kowell, McClintic and NudgeMaster have been and will be discussed herein. Kowell: As noted elsewhere, Kowell's disclosure of a preview button was after the date of Pace's invention of it. McClintic: To a POSITA, McClintic teaches a processor board, but not one that is configured to perform either the Testing Element or the Automatic Display Element. A POSITA would appreciate that McClintic fails to display an actual game to be played prior to the initiating activation of game play. McClintic teaches a bonus game. A POSITA reading McClintic would understand that the player will first play a game of chance, like a slot machine, and then, the game itself will determine if the player will be thrown into the bonus game. Qualification for the bonus game is not based on a player's decision to play the game, and it is certainly not based on a player's opportunity to observe characteristics of the bonus game before selecting "Play". To the contrary,

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	[per column 4] "A player operates the base game until he or she qualifies for the bonus game." The qualification criteria may be any variety of potential bonus game entry barriers. For example, the qualifying criteria may require hitting certain reel symbols or combinations of symbols or obtaining a minimum number of credit awards. Once the qualifying criteria have been satisfied, the player is entered into the bonus game play mode." (McClintic, 4:22-27). Only after the player is "entered into the bonus game play mode" by the system may the player see a "sneak peek" of the game board (among other optional features), which is a "Concentration" style game board where the player will be trying to locate 2 of a kind hidden within the board. The display of the "sneak peak" may occur anytime within the game itself but a POSITA would know that the sneak peek only occurs after the initiation of game play. This is confirmed in Claim 1 of McClintic, which states "displaying, <u>as part of a bonus game</u>, an array including a plurality of spaces if the event has occurred." A POSITA would further understand that applying the teachings of McClintic to prior art TTF would not yield an invention practicing the claims of the 223 Patent, but instead, a bonus game tacked onto TTF that the system would determine if and when to activate, whereupon the player would under certain circumstances dictated by the activated game itself could lead to a sneak peek at the concentration game board at any stage of game play (beginning, middle or end). The player would not have access to the sneak peek before making the decision whether to play TTF, and would not have a choice

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	whether to activate the bonus game mode (which is determined entirely by the system). NudgeMaster: As noted elsewhere, NudgeMaster did not teach the Automatic Display Element in the prior art. NudgeMaster also is not prior art. If and to the extent the Court adopts the construction of "automatic" implicit in the Friedman Report, none of the references identified and analyzed in the Friedman Report disclose any display of any constructed game field that is "automatic". Furthermore, for reasons shown elsewhere in this report, such an automatic display would be counterintuitive to a POSITA.
The Friedman Report also asserts that this element is obvious in light of Mr. Riedthaler's testimony that he sees no regulatory impediment to having a game-related preview such as a preview of the prize that would be provided. (Friedman Report, ¶¶ 234-236, 238).	As mentioned above, a POSITA understanding that in prior art TTF, the construction and testing of any game field only occurs after the initiation of game play by the player would understand that prior art TTF was incompatible with a preview of an actual game to be played as construed by the Court, because the game field in prior art TTF could not be generated until after the player committed funds and pressed PLAY to initiate game play. This would lead a POSITA away from the Automatic Display Element. Riedthaler's testimony, discussed in detail above, falls short of teaching the Automatic Display Element. A POSITA would understand that the prior art showed different ways of providing hints about an upcoming game, including, for example, displaying prize of the next game, which Riedthaler repeatedly alluded to in his testimony, and which has been described as "One of most

Tic-Tac-Fruit – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	ingenuous attempts at seeking to avoid the tag of being a 'gambling' machine'[.]" (William N. Thompson, Gambling in America, An Encyclopedia of History, Issues, and Society (2001)). If and to the extent the Court adopts the construction of "automatic" implicit in the Friedman Report, none of the references identified and analyzed in the Friedman Report disclose any display of any constructed game field that is "automatic". Furthermore, for reasons shown in elsewhere in this report, such an automatic display would be counterintuitive to a POSITA.

b. Response to Friedman's Contentions Regarding Walker (U.S. Pat. Pub. No. 2003/0060276)

336. Walker does not disclose the Testing Element:

Walker – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
The Friedman Report contends that "Walker renders this element as construed obvious by disclosing . . . testing to ensure that an outcome satisfies the criteria for a 'target outcome.'" (Friedman Report, ¶ 244).	Walker teaches generating a first outcome, generating a target outcome, accepting a wager, and then permitting the player to keep generating a second outcome until the target outcome is met without making an additional wager. So the player knows he or she will get the target outcome. Walker is not premised on the idea that the game field be tested after the system generates it to make sure that a player cannot find a better winning combination. Walker does not teach that the "testing" step occurs prior to "automatically displaying an actual game to be played on the touch screen game display to a player prior to initiating activation of game play." As such, considering the relationship of the Testing Element and Automatic Display Element, this element is not met.
The Friedman Report also opined that a POSITA would have been motivated to combine the testing teachings of Walker with several other gaming references,[9] including TTF and/or Michaelson. (Friedman Report, ¶ 244).	As explained above regarding prior art TTF, neither prior art TTF nor Michaelson discloses this element, and neither prior art TTF and/or Michaelson in combination with Walker renders this element obvious.

[9] Mr. Friedman does not identify, in either his Report or Appendix A-2 at element 44.5, these other references.

Walker – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
	A POSITA understanding prior art TTF and Walker, would, at most, understand the performance of testing after a player committed funds and pressed PLAY to start the game.

337. Walker does not disclose the Automatic Display Element:

Walker – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
The Friedman Report contends that Walker renders this element as construed obvious by disclosing a "guaranteed hand" mode for video poker games that "includes at least one card from the initial hand". (Friedman Report, ¶ 245). Further, the Friedman Report alleges that a POSITA would understand that video poker involves five cards, and that a guaranteed hand involving all five cards from the initial hand would "show the player what they're playing for." (*Id.*).	While Walker, as discussed above, discloses ways in which a player can obtain a guaranteed result based on a target outcome being met – some scenario to keep playing until a target is met, or could be time to get to target – Walker does not, disclose previewing the game on a touchscreen display before the player commits to playing the game, as per this element. Walker fails to teach automatically display as constructed by the court "automatically displaying an actual game to be played, properly construed, on the touch screen game display to the player before the player commits to play the displayed game." If and to the extent the Court adopts the construction of "automatic" implicit in the Friedman Report, Walker does not disclose any display of any constructed game field that is "automatic". Furthermore, for reasons shown in elsewhere in this report, such an automatic display would be counterintuitive to a POSITA.
The Friedman Report then opines that a POSITA "would have been motivated to	As explained above, none of the gaming references identified in and analyzed in the Friedman Report teach this element.

Walker – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
combine the automatically displaying teachings of Walker with several other gaming references that similarly teach games wherein automatically displaying an actual game to be played prior to the player initiating game play is performed[,]" citing the above sections related to Tic-Tac-Fruit. (Friedman Report, ¶ 245).	

c. Response to Friedman's Contentions Regarding Michaelson (U.S. Patent No. 7,291,069)

338. The Friedman Report contends that Michaelson renders obvious both the "Testing Element" and "Automatic Display Element". For the reasons discussed above regarding Michaelson with respect to my response to Tic-Tac-Fruit as the primary reference in Section X(D)(ii)(a), I disagree with the Friedman Report.

d. Response to Friedman's Contentions Regarding Vancura (U.S. Pat. No. 7,040,985)

339. Vancura does not disclose the Testing Element. My understanding is that Vancura was examined by the Examiner during the prosecution of the application leading to issuance of the 223 Patent.

Vancura – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
The Friedman Report stated that Vancura, Bregenzer, and Chambers, alone or in combination with certain other prior art references, discloses or renders obvious all elements of the Challenged Claims. The report incorporated "Appendix A-4 (Vancura chart)", and stated that these charts "provide[] an element-by-element analysis of each Challenged Claim[.]" (Friedman Report, ¶ 252).	Vancura simply discloses the addition of a wild symbol to a game. It did not disclose the Testing or Automatic Display Elements of the 223 Patent. A POSITA would not understand Vancura to teach this element. The Friedman Report failed to show how it contends that Vancura discloses this element.
Appendix A-4 additionally stated that "to the extent the PHOSITA would not have found this element obvious in view of Vancura alone, the POSITA would have	As explained above, neither TTF nor Michaelson discloses this element, nor renders this element obvious.

Vancura – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
found it obvious in view of TTF and/or Michaelson."	For the reasons shown above with respect to prior art TTF and Michaelson, these conclusory statements in the Friedman Report appendices do not rise to clear and convincing evidence teaching the Testing Element.

340. Vancura does not disclose the Automatic Display Element. As noted above, my understanding is that Vancura was examined by the Examiner during the prosecution of the application leading to issuance of the 223 Patent.

Vancura – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
The Friedman Report contends that "Vancura discloses that the gaming device for "displaying a pay table" and "displaying … a matrix comprising symbols randomly positioned in rows and columns," and a POSITA would have recognized that these reels would have been displayed prior to a user beginning game play. (Friedman Report, at Appendix A-4, element 44.6).	A POSITA would not understand Vancura to teach this element. While Vancura allows observation of a pay table before making a wager and starting a game, it provides no preview of a constructed game field of an actual game to be played itself. (*See, e.g.*, FIG. 8). A POSITA reading Vancura would understand that Vancura does not teach the automatic display of the constructed game field of the game to be played to the player before the player commits funds and presses PLAY to start the game.
The Friedman Report also contends that a POSITA would have known to combine TTF with Vancura, Bregenzer, and Chambers, and further, that any of Vancura, Bregenzer, and Chambers, either alone or in	For the reasons I stated above, with regard to each reference addressed in Sections X(D), I disagree with the Friedman Report's conclusion regarding obviousness here.

Vancura – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
combination with the other cited references, discloses or renders obvious each element of the challenged claims. (Friedman Report, ¶¶ 254-255).	

e. Response to Friedman's Contentions Regarding Bregenzer (U.S. Pat. Pub. No. 2004/0224745)

341. Bregenzer does not disclose the Testing Element.

Bregenzer – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
The Friedman Report stated that Vancura, Bregenzer, and Chambers, alone or in combination with certain other prior art references, discloses or renders obvious all elements of the Challenged Claims. The report incorporated "Appendix A-5 (Bregenzer chart), and stated that these charts provide an element-by-element analysis of each Challenged Claim. (Friedman Report, ¶ 252).	In Bregenzer, the player is informed in advance that there will be a winning combination, and then after the play commits to the wager, the player is able to select reels (*e.g.*, picking 3 of 5 reels); this activity is to get the player more interested in the game. Also, when a player does not win, the device allows the player to see what would have happened if another selection made. Having reviewed the cited portions, Bregenzer does not disclose any testing of a game field prior to displaying the game field to the player (before making visible on the touch screen display), and further, a POSITA reviewing this reference would not have found this claim element obvious based on Bregenzer alone as it does not disclose any testing whatsoever. Bregenzer does not teach a POSITA the concept of inadvertent winning combinations when system rules for game construction are followed. Moreover, Bregenzer, alone or in combination with other prior art references does not teach the Testing Element in the context of testing a constructed game field before a player have committed funds and pressed PLAY to initiate game play.

342. Bregenzer does not disclose the Automatic Display Element.

Bregenzer – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
Appendix A-5 of the Friedman Report contends that "Bregenzer discloses that the gaming device can view and "choose which reels to play", and a POSITA would have recognized that these reels would have been displayed prior to a user beginning game play." (Friedman Report, at Appendix A-5).	A POSITA reading Bregenzer would understand that a player is told in advance only that there will be a winning combination available in the game, and then after committing to play the game, the player places a wager and then obtains some selection of which reels to spin as part of process (e.g., picking 3 of 5 reels). This merely teaches a POSITA the idea of adding activity beyond the point of the wager to get the player more interested (likely in the hope that the player will keep playing the game, win or lose). Further, displaying reels that the user can choose to play does not teach automatically displaying the constructed game field of the game to be played. If the user still has to select which reel to play, then the user has not been presented with the actual game to be played – this would not occur since the user has not selected the actual game to be played. Also, where there is no win, a POSITA would understand from Bregenzer that a player can see what would have happened if the player had made another selection in the alternative to the spinning reels selected. Were a POSITA to combine this teaching with, for example, prior art TTF, TTF simply would be modified to show a player a finished game results screen, and then additional screens showing game results had the player hypothetically placed the wild symbol in alternative locations that would

Bregenzer – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	have resulted in better results. This not a teaching of the Automatic Display Element.
The Friedman Report also contends that a POSITA would have known to combine TTF with Vancura, Bregenzer, and Chambers, and further, that any of Vancura, Bregenzer, and Chambers, either alone or in combination with the other cited references, discloses or renders obvious each element of the challenged claims. (Friedman Report, ¶¶ 254-255).	For the reasons I stated above with regard to each reference addressed in Section X(D) above, I disagree with the Friedman Report's opinion. The combination of prior art TTF with any of Vancura, Bregenzer or Chambers would not result in a teaching of the Testing Element as combined with the Automatic Display Element in the claims of the 223 Patent.

f. Response to Friedman's Contentions Regarding Chambers (UK Pat. App. No. GB2,382,911)

343. Chambers does not disclose the Testing Element:

Chambers – Element 44.5 ("testing the game field…")	
Friedman's Report	**Response**
The Friedman Report stated that Vancura, Bregenzer, and Chambers, alone or in combination with certain other prior art references, discloses or renders obvious all elements of the Challenged Claims. The report incorporated "Appendix A-6 (Chambers chart)", and stated that these charts "provide[] an element-by-element analysis of each Challenged Claim[.]" (Friedman Report, ¶ 252).	Chambers generally relates to game play design such that a player can design his or her own game. A POSITA would understand that Chambers teaches a well-known approach to electronic slot machines: three symbols are visible on each of the reels, and "[a]s is well known in the art," the reels rotate and thus alter the symbols that are shown to a player. The Friedman Report failed to address how any feature of Chambers anticipates this element, or renders it obvious. As indicated in the discussion above, Chambers, read in view of the other prior art references identified and analyzed in the Friedman Report, fails to teach the Testing Element to a POSITA.

344. Chambers does not disclose the Automatic Display Element:

Chambers – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
The Friedman Report stated that Chambers describes a gaming machine that allows a player to "construct his/her own game from a variety of options" … "before play of [the] game is commenced." (Friedman Report, ¶ 203).	As noted, Chambers merely teaches the gaming machine allowing the user to customize his or her own game. A novice, for example, can create a simple version, and later can add on features by pressing the "intermediate" button. Players can control the gaming machine to include a

Chambers – Element 44.6 ("automatically displaying an actual game to be played…")	
Freidman's Report	**Response**
	bonus mode. Chambers does not teach the Automatic Display Element, to wit, automatically displaying the constructed game field of the actual game to be played.
The Friedman Report also contends that a POSITA would have known to combine TTF with Vancura, Bregenzer, and Chambers, and further, that any of Vancura, Bregenzer, and Chambers, either alone or in combination with the other cited references, discloses or renders obvious each element of the challenged claims. (Friedman Report, ¶¶ 254-255).	For the reasons I stated above, with respect to the each reference in Sections X(D), I disagree with the Friedman Report's statement regarding obviousness here; neither TTF, Michaelson, nor any other reference identified in and analyzed in the Friedman Report teaches this element.

g. Response to Friedman's Contentions Regarding NudgeMaster

345. NudgeMaster does not disclose the Testing Element.

346. Whether prior art or not, NudgeMaster does not disclose the Automatic Display Element for at least the reasons presented above in this report.

h. Response to Conclusory Statements in the Appendices to the Friedman Report

347. The Appendices of the Friedman Report contain oft-repeated and brief statements setting forth undocumented assertions about a POSITA. In some cases, I have responded to the statements in the course of discussing at least one of the prior art references above. In the interests of economy, I have not endeavored to

recite or specifically respond to them as they appear in the appendices. To the extent I have not specifically identified and commented on these statements in the foregoing discussion of the prior art in greater detail, it was because the statement was, in my opinion, conclusory and undocumented, and therefore not in need of a specific response other than to point out the lack of any bona fide analysis in the Friedman Report underpinning the conclusory, undocumented assertion.

348. In this report, I have considered the scope and content of the prior art, including the references identified and analyzed in the Friedman Report, with a focus on the Testing and Automatic Display Elements. I have also considered the differences between such prior art and the challenged claims discussed above, namely, that there is no such prior art reference, alone or in combination with other references, which teaches the Testing Element in combination with the Automatic Display Element.

349. Given the level of ordinary skill in the pertinent art, the robustness of the electronic gaming industry, the market incentives to design these games, the number of game designers in the industry actively working on game designs, and the amount of money expended in the industry on game research and development, the fact that the Testing Element in combination with the Automatic Display Element is missing in the prior art leads to the conclusion, along with the other

points made above, that the claims of the 223 Patent are not obvious. Certainly, there is no clear and convincing evidence to support the obviousness arguments.

iii. Comments Regarding Secondary Indicia of Non-obviousness.

350. As mentioned, Savvy Dog did not ask me to do a thorough analysis of the non-technical secondary indicia of non-obviousness. For my purposes, although I am advised that Savvy Dog expects to introduce evidence of non-technical secondary factors (*e.g.*, commercial success) at trial, I assume that there are no non-technical secondary factors weighing in favor of a finding of non-obviousness. Nevertheless, in reviewing the Friedman Report, I have two observations on this topic: (1) observations relating to long felt need; and (2) observations relating to the Friedman Report's position on near simultaneous invention of the 223 Patent claims by other independent inventors attempting to address the long felt need.

351. First, Friedman's Report, Paragraph 51, points to the secondary indicia of a "long felt need" and the "failure of others to find a solution to the long felt need". Then, the Friedman Report, Paragraph 233, reveals a long felt need for the invention of the 223 Patent due to the historical need to increase skill levels and reduce chance levels of gaming in order to avoid gambling-machine-regulations.

352. Specifically, the Friedman Report (Paragraph 233) identifies "The motivation to eliminate chance in gaming machines and thereby 'enhance the

appeal of games in jurisdictions which do not permit games of chance' dates back over 100 years[.]"

353. The Friedman Report notes that this long felt need existed throughout the life of the TTF product, including the prior art TTF product.

354. The Friedman Report, Paragraph 239, states that "the concept of a gaming machine that displays the amount of the next prize before the player makes the next play is over 100 years old." And yet, despite the existence of the display of the next prize to be won, the Friedman Report notes that the long felt need above persisted.

355. In view of the foregoing needs and attempted solutions, and in view of the robustness of the electronic gaming industry in the prior art, it is my opinion that the fact that no one came up with the solution described in the combination of the Testing Element and the Automatic Display Element is supporting evidence of the non-obviousness of the claims of the 223 Patent.

356. Second, the Friedman Report fails to establish that any near simultaneous independent invention existed that would tend to show the obviousness of the claims of the 223 Patent. Despite the robustness of the electronic gaming industry and the presence of competitors in the marketplace for years trying to meet the needs of the marketplace in full view of the long felt need identified above, the Friedman Report fails to demonstrate and any independent

inventor (other than Pace) ever invented the subject matter described in the claims of the 223 Patent.

XI. CONCLUSION

For the above reasons, the Friedman Report fails to provide clear and convincing evidence of the invalidity of any claim at issue of the 223 Patent under any theory set forth in the Report.

Submitted this 16th day of December, 2021.

Kevin Harrigan, Ph.D.